

# COAL AGE

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## *Shall We State Our Case? Or would we rather be condemned by the public unheard?*

THE anthracite companies, at least the producing end of the anthracite industry, if they are guiltless of blame for the present deplorable fuel situation throughout the country, are doing themselves and their industry a great wrong by not entering into a broad, definite campaign of publicity, with the idea of making the public understand just who is to blame for the present troubles.

The newspapers of the country are quick to give space to letters and articles that condemn the coal industry and are slow to accord a hearing to the coal-mining man when he wishes to present the true story. Papers which formerly had merely a definite political policy, which regulated all that appeared in their columns, have now as clearly defined a policy relative to industrial matters, regarding which they permit little parley or controversy. They are becoming more liberal politically and more narrow industrially.

If the present fuel situation continues, it is inevitable that we will have radical legislation tending to Federal control of the entire coal industry. The coal men who do not lend their earnest effort to remedy present troubles and reduce exorbitant prices—whether they are to blame for those prices or not—are doing the industry an injustice.

The one certain way to better conditions is to enact legislation that will permit the coal corporation to distribute its own product, at the same time holding it responsible for such distribution. At the present time the producer of coal is helpless in the matter of prices and deliveries after the coal leaves his hands. The broker and the retail dealer can sell the coal they buy for any price the public will pay. If the producer refuses to sell to such men, it is quite certain that such action on his part will be misconstrued, and he will be accused of attempting to illegally regulate coal distribution.

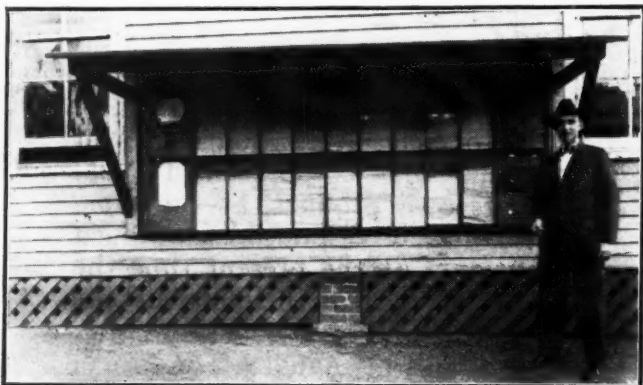
It is absolutely necessary that steps be taken now and that the coal producers of the country decide on a definite plan, and stick to that plan until the people and their representatives in Congress provide a remedy that will not destroy the industry, but that will serve the public efficiently and encourage the coal-mine owner to develop his business along broad, economic lines.

We believe that anthracite mining as an industry is conducted with greater justice to the consumer than any other business in America, and still anthracite mine owners persist in maintaining a provoking attitude of silence in the face of destructive and undeserved criticism.

## Ideas and Suggestions

### Meeting and Forestalling Trouble

Too many mine foremen think they can forestall trouble by not meeting it. A man demands pay for some work done or time expended, and the foreman says he will "turn it in" at the office, or consider it, or will talk it over later with the superintendent, never intending to



WITH THIS BOARD EVERY MAN KNOWS AT ONCE WHAT IS COMING TO HIM

do anything of the sort. He trusts the miner will forget it or lose interest in it.

But after statement day there is all manner of trouble. Owing to the delay which has occurred, the facts are not quite clear to the foreman, who has many other matters on his mind. The demand may have been quite unreasonably large, but ultimately it may all be granted because the facts are now obscure. Settled at the time it might have been more correctly evaluated to the satisfaction of both parties.

At the coal and other mines of the Sloss-Sheffield Steel and Iron Co., of Brookside, Ala., a timesheet-inspection board has been erected so that the men can see what time has been recorded. If a man does not make a complaint soon after this posting, he is naturally regarded as presenting a claim of doubtful merit. Each foreman turns in his time in duplicate; one copy is retained by the timekeeper and one copy posted on the board.

### Value of Shaft Couplings

Shafts sometimes break. When this occurs, it is well to be prepared and have a shaft coupling handy. To repair a broken belt is usually a simple matter, compared with repairing a broken shaft. In the former case lacing, wire, or cement, is all that is needed. In the latter case it is difficult to devise a makeshift in a short time. Hence the importance of having a coupling at hand.

The cost of a broken shaft may mount up seriously; wages are wasted, deliveries delayed, and the reputation of the man in charge is endangered. There are shaft couplings on the market that will easily mend an ordinary break in a few minutes. These couplings are so made as to fit any shaft, and the union is secured

without throwing the shaft ends out of alignment, thus avoiding undue friction on the bearings.

Such couplings are also made without projecting screws. They look neat and are amply strong. During a lull in operation the shaft may be mended permanently and the coupling removed in readiness for the possibility of future breaks.

### Keep the Shafting Clean

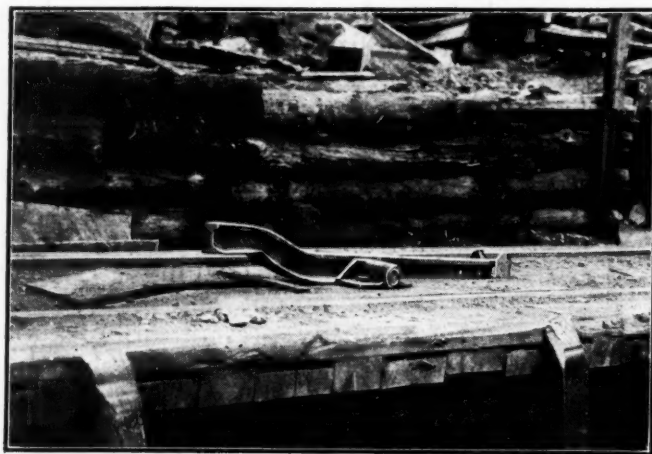
Cleanliness is always highly desirable, especially in plants where the product may become soiled if dirt is allowed to accumulate. It is well, however, to keep shafting cleaned, and even polished, in almost any plant.

On account of the rotary motion of shafting and the resultant centrifugal force, dirt particles and oil are easily thrown off the same as from pulleys. It is consequently not difficult to keep shafting clean and polished after it is once in that condition. This can be done from the floor with ease, by means of a long-handled wiper. Never stand on a ladder while doing such simple work, it is wasteful of time, dangerous and unnecessary.

Keep the plant clean from top to bottom at all times, and it will have a wholesome effect on the workers. Cleanliness begets cleanmindedness, cheerfulness and co-operation. When a workman sees that the "boss" has the interests of the working people at heart, he will naturally respect the boss and will boost the plant.

### Safety Dogs To Protect Planes

The safety dog is almost as old as the mine rail, but here is one which is used at the Bessie coal mine of the Sloss-Sheffield Steel and Iron Co., at Maben, Ala., a

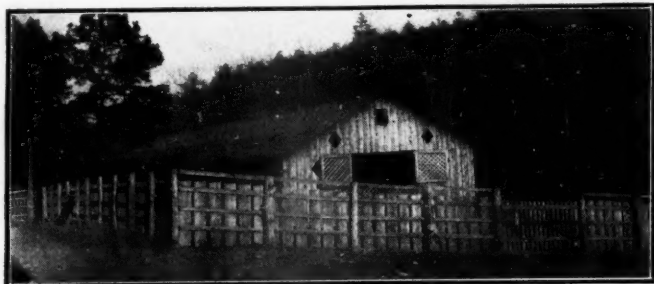


SAFETY DOGS WILL REACH THE RUNAWAY CARS LONG BEFORE YOU CAN

simple contrivance but one which satisfies every need and will pay for itself many times over by preventing expensive wrecks. F. R. Bell, the superintendent of the mine, designed this safety dog. One is placed every 100 ft. for the full length of the incline.

## Mule-Proof Stable Fence

The mule is hard to retain in his compound with any ordinary fence because for appearance' sake the board palings of all such inclosures are nailed on the outside and can easily be kicked loose from the inside. Seeing this, Superintendent Howard J. Thomas, at the Brookside



A FENCE PROOF TO THE KICKING OF MULES

plant of the Sloss-Sheffield Steel and Iron Co., put the board palings on the inside, and now even an Alabama mule cannot jar them loose. The illustration shows the barn and the fence surrounding it, which is more than "horse-high."

## Turnout Tables for Use in Mine Work

By O. H. HAMPSCH\*

Considerable trouble has been experienced in the past by mine foremen and track layers in installing track and turnouts in mines. In many cases frogs have been set haphazard, without regard to the length of the lead. This makes the approach to the frog irregular and often means a derailment of motor or cars.

The table and sketches here shown will be of aid to the foreman or tracklayer who has this kind of work to do.

TABLE OF SWITCH VALUES

Frog No.	Frog Angle	Gage	Lead	Length of Switch Point	Spread of Switch
2½	22°-37'	3'-6"	19'-7"	7'-6"	5½"
3	18°-54'	3'-6"	21'-9"	7'-6"	5½"
3½	16°-16'	3'-6"	23'-10½"	7'-6"	5½"
4	14°-15'	3'-6"	25'-8"	7'-6"	5½"
2½	22°-37'	3'-0"	15'-7"	5'-0"	4"
3	18°-54'	3'-0"	17'-6"	5'-0"	4"
3½	16°-16'	3'-0"	19'-4½"	5'-0"	4"
4	14°-15'	3'-0"	21'-0½"	5'-0"	4"

The frog numbers and gages are those most commonly used in mine work. The lead in each case has been figured from the point of switch to the half-inch or ac-

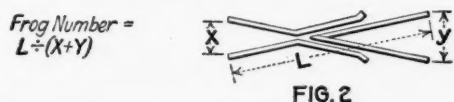
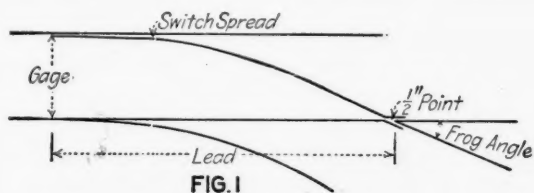


FIGURE SHOWING NAMES OF SWITCH PARTS

tual point of frog. The switches and frogs are computed straight.

\*Henderson, Ky.

The method of obtaining the frog number, as shown, is self-explanatory. Care should be taken, however, to make the measurements to the gage or running side of the rail.

## Convenience of Split Pulleys

There is no question but split pulleys are great time-savers. Solid pulleys are still used to a considerable extent. They are good on high-speed work and in places where they can be slipped off the shaft easily.

But where it is desired to put a pulley in the middle of a shaft on which there are several other pulleys already tightly keyed in place, all of which would have to be removed in order to put a solid pulley into position, it is clearly evident that it might cost more than the price of a split pulley to get the solid pulley on and the other pulleys back in place.

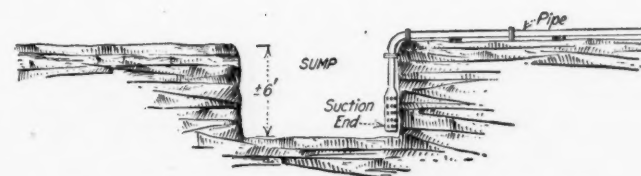
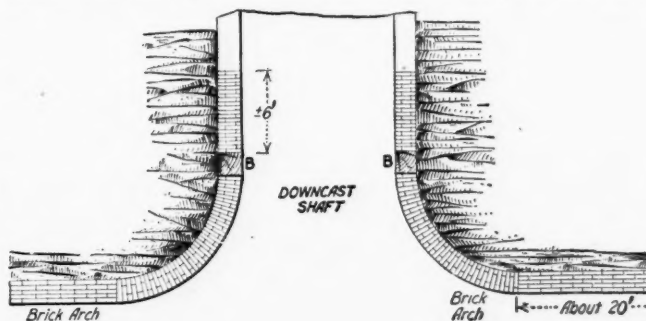
Split wood pulleys need tightening occasionally when new, on account of shrinkage in the pulley and in the bushing. It is important to keep split pulleys (and all other kinds for that matter) from slipping on the shaft. Each per cent. of pulley slip is that much power wasted.

## Keeping Ice Out of Shaft Bottoms

By TIM GOLDON\*

In winter the bottoms of airshafts become choked with ice, thus blocking the airway so that it is necessary to send men in to dig it out. Owing to the cold the men cannot stay long on the job. It is also risky, because of the falling ice.

Instead of putting in the usual wood curbing, bricks should be used just above the vein of coal, as shown in



TO RELIEVE THE NECESSITY OF DIGGING ICE

the sketch. The lining should extend about 6 ft. up the shaft. A brick arch extending for about 20 ft. along the entries should be built below the timbers BB.

The sump should extend about 6 ft. below the level of the coal bed. The pump suction should be connected to the steam pipe by a bypass controlled by valves near the pump. These valves should be so arranged that steam may be turned into the sump to thaw any ice that may form there.

\*Clinton Coal Co., Clinton, Ind.





## Lump-Coal Storage and Reclaiming Plant

By H. M. McFarland\*

*SYNOPSIS—It is highly important that a long-wall mine worked with convict labor should operate regularly regardless of the car supply. To this end a large ground storage space has been prepared wherein lump coal is placed whenever shipping facilities are inadequate. From here it is reclaimed by mine cars and again sent through the preparation plant before shipment.*

The Montevallo Mining Co. operates at Aldrich, Ala., a longwall mine with convict labor. This is the only longwall mine in the state, and in the last few years, by the introduction of modern mining machinery, it has been brought to a daily output of 600 tons, with an average lump content of 75 per cent., or approximately 400 to 450 tons of lump coal per day.

With convict labor and a longwall system of mining, it is eminently advisable to work six days per week. However, occasional market conditions and the varying supply of railroad cars have necessitated the introduction of some method for temporarily disposing of such a large amount of lump coal and its reclamation when conditions are again favorable.

The Montevallo coal by nature being extremely hard, disintegrates but slightly on exposure to the weather; and being produced in very large lumps, it lends itself admirably to stocking. After some experimentation and taking into account the various natural advantages of the ground below the tipple, the following plan was adopted in the late fall of 1916. The railroad cars, or sometimes privately owned cars (this company has three), after being loaded on the lump track under the tipple

are dropped down by gravity a few hundred feet from the loading point and stopped at some convenient place between the first and second railroad trestles, as shown on the general layout, Fig. 5, and also in the illustration, Fig. 1. Or, if this storage space is filled, they may be dropped just below the second trestle.

Inasmuch as the railroad track is approximately 25 ft. above the narrow-gage yard tracks, the coal is skidded down planks secured to the top of the gondolas; otherwise it is taken out from the bottom of the cars by opening the hopper doors.

### PROVISION FOR STORING COAL ON THE GROUND

After all the coal that it is possible to discharge has been unloaded by this method, a wall built up of the larger lumps is carefully piled at clearance along the railroad tracks. Planks are then run from the tops of the gondolas to the wall and wheelbarrows, after being loaded by hand on these planks, are wheeled over to the edge of the pile and over-ended. These methods result in a minimum of breakage, since the coal has but a slight vertical drop and rolls over coal down the incline to the foot of the pile.

The total capacity of the storage in both places is about 20,000 tons. The cost of unloading is approximately 11c. per ton. This, of course, does not include breakage, which, however, is not serious, as the smaller sizes of domestic fuel are constantly in demand.

When conditions are favorable and there is a good supply of railroad cars, the coal is reloaded into 1-ton mine cars on tracks, as shown at the foot of the pile (see general layout, Fig. 5). These cars are then pulled up above the lower switch by a 7-ton gasoline locomotive, and pushed around the loaded track to the knuckle, from

\*Mining engineer, 1409 American Trust Building, Birmingham, Ala.



which point they run by gravity to the foot of the incline below the 300-ton storage bin.

Here, by means of a small steam hoist, three loads at a time are pulled up the incline into the Ramsay revolving dump, and emptied without uncoupling the trip from the rope, or the cars from each other. The trip is then dropped out of the dump and back to the foot of the incline by gravity. The rope is here uncoupled and the cars run by gravity to the foot of the pile to be reloaded. If the upper storage pile is being loaded, the cars are pushed up to the foot of this pile by the gas-line locomotive previously mentioned.

The incline to the bin is on a 38 per cent. grade, and the dump itself is set on a 7 per cent inclination. This is sufficient to cause the empty cars to return, when dumped, to the bottom landing by gravity without manual assistance.

#### MANNER OF OPERATING ROTARY COAL DUMP

The small single drum hoist is operated by an engineer who also revolves the dump in the following manner. Located on the side of the storage bin is a 10-in. diameter steam cylinder with a length of stroke equal to one-half the circumference of the dump. One end of a  $\frac{3}{4}$ -in. steel rope is fastened to the top end of the piston. This rope is then carried by suitable pulleys twice around the circumference of the dump and brought back to the lower end of the piston.

Consequently, when the engineer opens the valve admitting steam to the top of the cylinder, the dump is revolved 180 deg., and when steam is admitted to the

bottom, the dump is revolved back to its original position. The empties are then allowed to run back for re-loading.

In order to load the bin evenly on both sides, it would be advisable to have the dump revolve 360 deg., first to the right and then to the left. This is easily accomplished by making the steam cylinder of a length equal to the circumference of the revolving dump. A few seconds in time is also saved in this manner, as the dump while revolving is not stopped and reversed. A cylinder of half this length can be made to give a full revolution to the dump if sheaves are mounted on both the piston rods.

#### ONE MINE CAR CAN BE DUMPED EVERY MINUTE

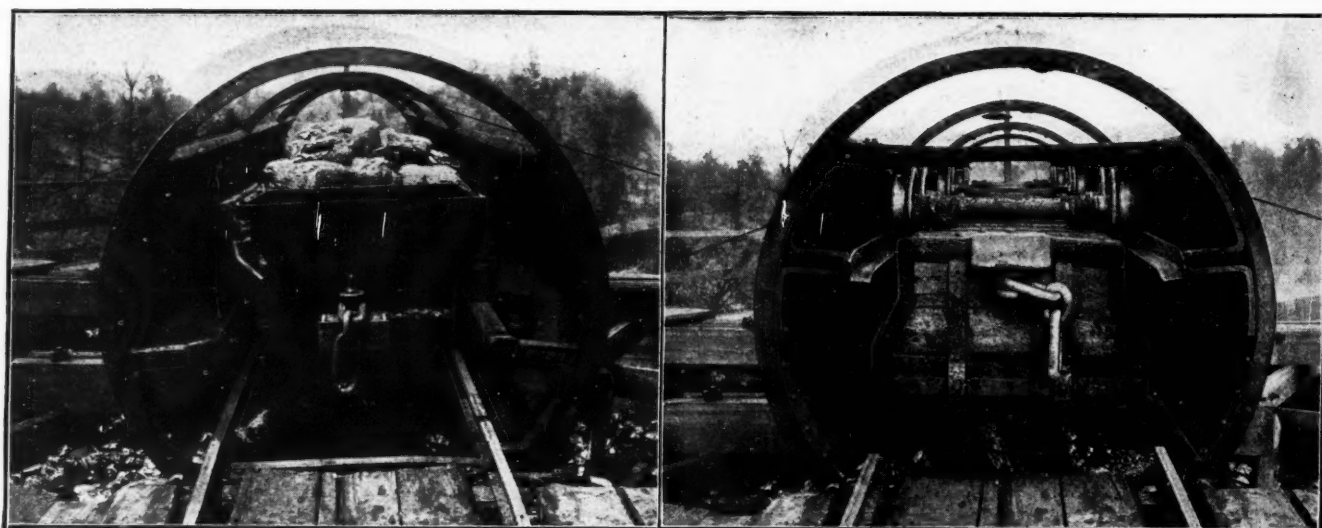
This dump has been designed and patented by Erskine Ramsay, first vice president and chief engineer of the Pratt Consolidated Coal Co., Birmingham, Ala. There are several other successful installations in operation in this district.

Attention may also be called to the 18-car Ramsay dump used by the H. C. Frick Coke Co. at its Lemont No. 2 mine. This dump was described in *Coal Age* for Aug. 5, 1916.

Of course, the main advantage in using this type of dump is the great rapidity with which whole trips are emptied. Solid end cars may also be used, and practically no labor is required and no standing trip is necessary for the operation of the dump. In fact, the whole operation at Aldrich is so rapid that it has been possible to load, hoist and dump coal at the rate of one car per



FIG. 1. GENERAL VIEW OF TIPPLE APPROACH AND COAL STORAGE YARD



FIGS. 2 AND 3. DUMP IN UPRIGHT AND INVERTED POSITIONS

minute; or, in other words, the large 300-ton storage bin can be filled in 5 hours. The actual dumping on top of the bin from the time the trip lands in the dump until it is ready to drop out again by gravity consumes not over 10 seconds.

From the bottom of this storage bin the coal is drawn off by a reciprocating feeder to a 36-in. rubber belt conveyor. This travels about 200 ft. per minute and discharges directly over the side and at the upper end of a shaking screen under the tippie, also just below the Phillips cross-over dump for discharging the cars from the mine.

#### CAN LOAD RAILROAD CARS WHEN MINE IS IDLE

This arrangement lends itself readily to loading railroad cars under the tippie, whenever, from any cause, the mine is idle. Naturally the bin is kept practically full at all times, and at night or early in the morning the conveyor may be started and railroad cars loaded.

The capacity of the conveyor is ample, and a 50-ton car may be loaded in 15 min. The fines, if there are any, go through the shaking screen and are elevated to the raw coal washer bin.

The cost of thus reloading the coal is approximately 10c. per ton, but with the extensive domestic markets

developed and the consequent high price obtained for this excellent domestic coal, all costs of unloading and reloading are overcome through supplying the market

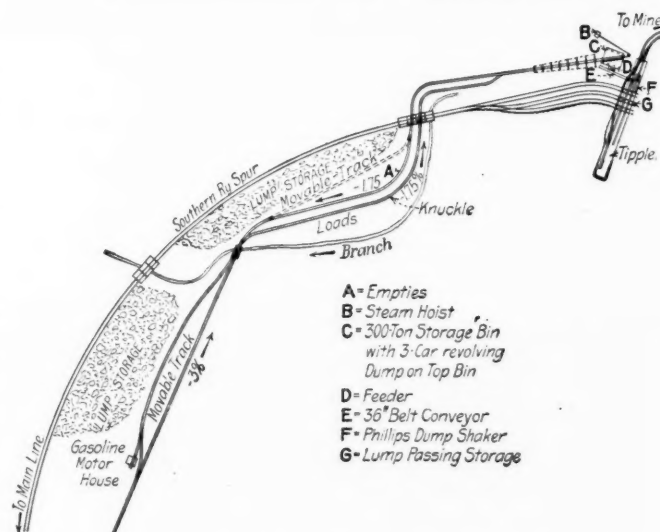


FIG. 5. PLAN OF LUMP STORAGE YARD

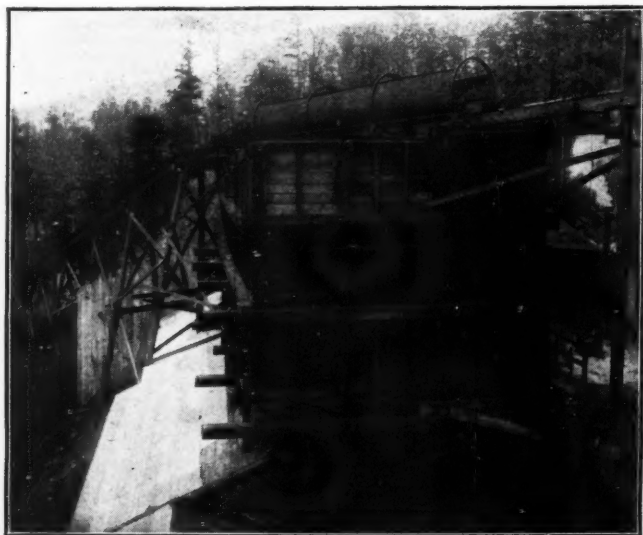


FIG. 4. DUMP SURMOUNTING BIN

when the demand is greatest and when cars are obtainable.

The cost of stocking and reloading the coal could be greatly reduced by installing another rotary dump of the same type, for handling coal from the mine tippie to storage. This storage might be a bin or a side-hill arrangement, but should to a great extent, do away with the cost of loading the coal into the 1-ton cars.

The illustration at the head of the article shows the tippie and the storage bin and also the trestle by which the mine cars are conveyed to the rotary dump.

**Two Ears of Corn a Year per Acre Were Paid by the Lehigh Coal Co. in 1792 and following years for the lease of large areas of coal land.** The bulk of the coal-bearing lands were patented by the State of Pennsylvania from 1795 to about 1816, the payments made by the grantees being \$2 to \$4 per acre. During the 40's and 50's of the last century \$50 per acre was a good price, but by 1875 the value of the best land had risen to \$500 an acre. This value rapidly increased until at the present time \$3000 per acre is considered only a fair price for good virgin coal land, and but little of this has come on the market for years.—R. V. Norris at the International Engineering Congress, San Francisco, California.



# Filing Survey Data at Mines—I

BY R. S. SCHULTZ, JR.\*

*SYNOPSIS*—This article, being taken from the "Engineering and Mining Journal," is written from the metal miner's viewpoint. Without exception, however, nearly everything described is adaptable in coal-mining practice; it is perhaps the most comprehensive discussion of the loose-leaf system in mining engineering that has yet been published.

An engineering force is, or should be, an adjunct to the operating staff of any mine worthy of the name. Some mines require but little engineering work, while others need a large force of skilled engineers. In much the same proportion all mines collect more or less data on various subjects, and the logical place to file these data is in the engineer's office. Systematic filing is most important, but frequently this is not realized by mine managers or even by engineers themselves. Engineers as a class are notably efficient, capable, hard-working men in the field, but it is surprising how often the best field engineers are careless in recording and preserving for future use the information so laboriously obtained. No filing system can overcome carelessness in recording, but a good one will make accurate recording easier and will preserve such records for future use.

The ideal filing system for an engineer is one that is so simple and efficient that a stranger, with little or no assistance, can find any information on file quickly and without difficulty. The details of any system used must be somewhat a matter of personal opinion and will be governed largely by local conditions. After a number of years' experience under widely varying conditions, I have evolved a filing system which, although far from perfect, is efficient, accurate and sufficiently elastic to meet all but the most unusual requirements. An account of its main features may be of interest to some and of value to others, especially to any who may be establishing such a system.

The data to be filed in the ordinary mine engineer's office cover a wide range, but are readily divided into a few general classes requiring somewhat different methods of filing. In general it may be said that the loose-leaf system will be found to cover practically all requirements. The filing of three general classes of data will be considered.

## SURVEY FIELD NOTES AND SIMILAR MATERIAL

The first general class comprises such data as survey field notes (both surface and underground), field sketches, cost and performance data, estimates, bills of material, office computations and any other data that can be recorded on a card or sheet not over 5x8 in.; all to be recorded on loose leaves or cards and filed in 5x8-in. card-file drawers, suitably indexed and subindexed.

Survey field notes form the largest division under this class. The usual form of bound survey fieldbook has an advantage in ease of handling in the field, but for filing and ready reference it is not a success, even when separate books, carefully indexed, are kept for each class

of work. The loose-leaf form of notebook is being employed more and more extensively for field use. Some dealers handle a line of loose-leaf notebooks and sheets, but most of these are considerably smaller than 5x8 in. This size will be found to make such an excellent note sheet that the purchase of special books and sheets will be warranted. Forms ruled and printed exactly to suit local conditions can be secured at slight additional expense and will prove economical in the long run. The binder is the most important part of the loose-leaf equipment and should be selected carefully to meet conditions peculiar to its use. In all cases it should be covered to protect it from unnecessary wear and dirt. For underground use a rubber cover will be found a decided advantage.

## ADVANTAGE OF THE LOOSE-LEAF SYSTEM

The loose-leaf system of field notes has the advantage of permitting the field engineer to take with him only such notes as may be required for the work planned for the day. This does away with the useless burden of two or even three notebooks so frequently carried, permits

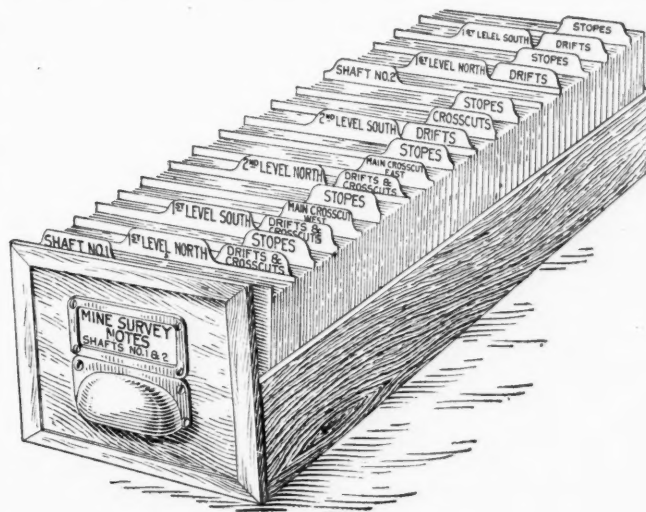


FIG. 1. THE CARD FILE

rapid finding of the desired notes and at the same time leaves practically all field information in the office for use there as may be necessary. In some mines a carbon copy of the field notes is made. This copy, on a sheet of different color to distinguish it readily from the original, is filed as an office copy and is not allowed to be taken from the office, the original being available for field use. In unusually wet mines a sheet of heavy oiled paper, ruled and printed with the survey note form, may be used as a cover and a carbon copy made below. The oiled cover may become spoiled or unreadable, but the carbon copy will remain in good condition. One necessary precaution in wet mines is to have the forms printed with waterproof ink.

Erasures should seldom be made on field notes and should not be permitted after the notes have been recorded. Corrections, alterations and additions made later should show the original figure, lightly cross-hatched but still easily readable, with the correct figure close to

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such records and reports will depend so largely on local operating conditions and on personal opinion that only the general features will apply to any number of cases.

Under widely varying conditions, loose-leaf filing in ring or post binders will be found entirely satisfactory for both recording and filing. Elasticity and ease of handling are the best arguments for this system and will usually warrant its adoption for this class of material.

Survey records form the most important subdivision of this class, and the only one that will have general application to all mines, varying only in minor details according to the system of surveying employed. These records are the necessary complement of the field notes and should be considered of equal or even greater importance. Many engineers have large, heavy ledgers with special ruling for their survey records, with the computations preserved in the same or separate books; other engineers have smaller books and do not preserve the computations; all engineers will agree that some form of record is necessary. The loose-leaf system has many advantages for these records and has proved satisfactory. It is elastic; it permits classification; it enables several men to work at once; it is of especial advantage in plotting maps, requiring the plotter to handle but a few sheets at a time; it is also economical.

One essential of accurate survey records is the prompt transfer of the field notes. If possible, this transfer should be made by the field engineer or note man, since he is most familiar with the notes. Both the field notes and the office records should show the date and place of the survey and the name of the instrumentman. In addition, reference to the field-note file, the names of the computer and checker and the dates should be noted. Carelessness and inefficiency are sometimes traced by this plan.

It is generally admitted that survey computations should be preserved. Separate books are generally used for this purpose but, at best, are unsatisfactory. The best practice shows the computations with the record. Fig. 2 shows a form used by me. Slightly more than the top half of the sheet is ruled for the traverse record, the bottom being left for the computations. All figuring, no matter how trivial, used in connection with the final record is included on the sheet and is always instantly available for reference. The form shown is 14x22 in., and it should be filed in a special ring binder.

#### TRACINGS, BLUEPRINTS, MAPS, ETC.

Tracings and blueprints form the largest single class of material to be filed in most engineers' offices. An efficient system of recording and filing such material is essential to good work and is of enormous value to all departments of the organization. The engineers' office or drafting room is the natural place to file all engineering data and especially blueprints from whatever source obtained. Some part of the mass of such material is referred to with such frequency that the loss of even a few seconds in finding each print amounts to a considerable total by the end of an ordinary day. Many engineering offices have systems that are both rapid and complete, leaving little to be desired. Many others, unfortunately, fall far short of this perfection with "hit-or-miss" systems which frequently miss.

The variety of subjects covered by the prints in the average mine engineers' office is so great that any system

must be somewhat elaborate and care must be exercised lest it become of more importance than the end for which it exists. Local conditions will determine many of the details of any system; certain general features and some details will apply to all conditions.

Whatever system of filing is adopted should be devised with two objects—simplicity and avoidance of duplication—constantly in view. Divided responsibility is a serious pitfall and should be avoided, since it is a cause of carelessness and inefficiency. The entire filing system, including the care of all tracings and blueprints, should be in charge of one man having a thorough conception of the importance of his work and a grasp of the essential features of filing as well as of the details of the system employed. Wherever possible, this man's entire time should be devoted to filing, to keeping the files clear of obsolete material and to supplying the engineers and draftsmen with the latest and most complete information.

Two general classes of drawings are handled in all engineers' offices—those made in the office itself or in other offices of the company, known as "home drawings," and those obtained from other concerns, known as "foreign drawings." These two classes should be kept distinct and separate at all times. In the general class of "home drawings" there are two subdivisions requiring somewhat different treatment.

The class embracing maps and other paper drawings forms a large and important part of the data filed in

Copper Mining Co. Denver, Colo.		
Details of Automatic Stop 24"x48" Hoisting Engine Shaft No. 5		
Scale $\frac{1}{4}" \text{ \& } \frac{1}{2}" = 1"$		June 21, 1914
Drawn By: G. H. Traced By: T.H.C. 6/25/'14 Checked By: W.K.T. 6/28/'14 Approved By: C.B. 6/28/'14	No. 1076 File No. 2 Drawer No. 3	Issue No. Original

FIG. 3. TITLE ARRANGEMENT

all mine offices. The great importance of accurate maps of the general workings and of the separate openings, as well as of assay and sample maps, is being realized more and more, until mapping has become one of the most important duties of the mine engineering force. As far as possible, maps should be uniform in size and arrangement, and those covering similar phases of the work should be drawn to the same scale. Considerable latitude must be allowed in this respect, however, since working conditions will largely determine these questions and since the variety in subject and use is too great to permit any hard and fast rule to be set. Where the expense is not prohibitive, all maps should be drawn on the best grades of mounted drawing paper. The method of filing will be determined largely by their size.

Original mine maps are far too valuable to permit their general and constant use. They should be preserved as a final and most accurate record of all openings, to be seldom used except for reference. It is excellent practice, therefore, to have tracings of all mine maps, so that blueprints can be used for all rough work, especially







prints to uniform size, leaving the inner line as a limit of the working space and also to give the print a neat, finished appearance. The cloth should be left full width, except for the selva torn off the edges. This leaves ample margin for tacking down, for trying the pens and for notes and figures. It also permits the tracing to be remounted for additions or alterations without putting the tacks through the main drawing.

It is to be noted that only full-length and half-length sheets are made up by the printer, extra-length sheets being made up by the draftsman, as required, from a plain roll kept on hand. This requires the border lines, title and various tables to be added by hand, and it will be a most unusual engineer who will not manage to use standard-length sheets in all but very rare cases.

#### DETAILS OF TITLE ARRANGEMENT

A space 4x6 in. at the lower right-hand corner of the sheet is allowed for the title. A typical example is shown in Fig. 3. The title gives a record of the original drawing and, as such, is kept separate and distinct from any subsequent alterations that may be made. It is excellent practice to require the information given in the title to be placed on the detail paper when the drawing is started. This information should be furnished the draftsman by the chief engineer or chief draftsman, who should immediately make a record of it on some form of drawing-record card. This gives a double check on the drawing until its completion, with ample identification. The unfinished drawing may be laid aside at any time for more important work and yet can be taken up again by any competent man without difficulty or time lost in identification. The details of the title explain themselves. The drawing number should be in large, heavy figures to stand out plainly, while the file and drawer numbers should be smaller but still very plain. Many engineers require the drawing number to be placed in two opposite corners of a drawing, the idea being that however a print may lie in a pile the drawing number will always show in the proper corner. The space for issue number is shown as made up by the printer and used for the first printing. When a change is made on

No.	Date	Description	Made By	Checked	Approved
1	7/21/14	Size and Weight of Beam, B-1 Altered	C.T.D.	B.C.B.	7/23/14
			By	Date	By

TABLE OF CHANGES

FIG. 5. TABLE OF CHANGES, 6 IN. WIDE, RUNNING UP INDEFINITE DISTANCE

the tracing, the word "Original" is entirely inked over and the correct issue number stamped in the corresponding blank space on the prints. It should be observed that for issues subsequent to the original the issue number and the change number will be the same.

#### TABLES OF REFERENCES AND CHANGES

A space 4x6 in. is allowed for the table of references shown in Fig. 4. This table is placed directly above the title, in which position it is quickly referred to, especially in a pile of prints, without removing the print from the drawer or pile. Such a table, properly filled in, will usually obviate the necessity of a cross-reference index. All drawings that enter into the work shown should be given in this table, which should be kept strictly up to

date. The column for classification is given to permit grouping of the various drawings referred to.

A space 6 in. wide and of indefinite height is allowed for the table of changes shown in Fig. 5. This table is placed directly above the table of references on the right-hand side of the drawing. These two tables with the title form the part of the drawing that will be referred to most frequently as it lies in the drawer. In the position indicated, this whole information can be referred to quickly by merely turning the corner of the drawings above. The table of changes as printed on the tracing has space for six alterations, but the top

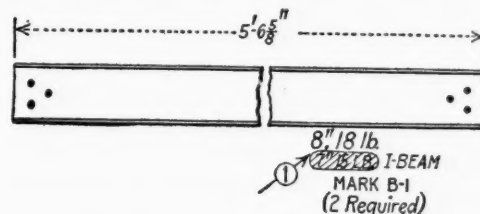


FIG. 6. METHOD OF MAKING ALTERATIONS ON DRAWINGS

line is printed light, permitting easy expansion should more changes be necessary. A complete record of the change is made in the table, and it is quickly found and identified on the tracing by a numbered arrow, as in Fig. 6, showing that beam B-1 in the original issue of the drawing was specified as a 7-in. 15-lb. I-beam. For some unknown reason, it was decided to change the beam to an 8-in. 18-lb. I-beam, the alteration being change No. 1 on the drawing. The table shows that the alteration was made July 21, 1914, by C.T.D., that it was checked July 22, 1914, by B.C.B. and that it was approved July 23, 1914, by W.L.S. In making such an alteration, the original figures should not be erased, but should be preserved for reference, in such form that their superseded character will be instantly evident.

The bill of material, when needed, is placed in the upper right-hand corner of the tracing. A space 6 in. wide and of indefinite depth is allowed for it, expansion being possible at the bottom to suit the necessities of the drawing. As far as possible, grouping by subjects should be used. This bill of material is not printed on the tracing as purchased, but is added by hand in the office when necessary, since many of the drawings made in a mine office will not require such a bill.

**Whitewash Will Preserve Timber from Decay**—Wooden doors coated with whitewash last longer than untreated doors.—W. H. Hepplewhite at a meeting of the Midland Counties Institution of England, Nottingham, England.

**The Percentage Recovery of Anthracite Depends on Pitch**—According to R. V. Norris, the yields for varying pitches are approximately as follows:

Slope of Seam, Deg.	Recovery, Per Cent.	Slope of Seam, Deg.	Recovery, Per Cent.
0	82	50	55
10	80	60	54
20	75	70	53
30	68	80	52
40	61	90	50

**To Completely Extinguish Mine Fires** not only must the flame be put out, but the heat must be dissipated. This is the harder part of the work. The temperature may long remain so high that when air is supplied the fire will break out again. Speaking at meeting of the Manchester Geological and Mining Society, A. Stoker declared that a fire that had been stopped off for 28 years, and had died out for lack of oxygen, broke out again in several local conflagrations when supplied with air, which is a strong argument in favor of water quenching as against gas quenching.

# King Coal Comes Back

By EDGAR WHITE\*

*SYNOPSIS—A few months ago the coal fields of Macon County, Missouri, were in large measure idle because the mines could not compete with other fields or other fuels. Today the mines are operating at all the capacity that the labor supply will permit.*

After many years of ups and downs, old King Coal seems to have come back to his realm, at least Macon County, Missouri, one of the largest coal-producing sections in the state, is enjoying the reappearance of his dusky highness. Various publications had so well proved to everybody's satisfaction that oil, water-power and various other things were destined to take the place of coal, that the industry was supposed to be on its last legs.

The reawakening of the Missouri coal fields began in the early part of last summer and has increased steadily, until now every large coal mine has more orders than it can take care of. New men are being put to work as fast as places can be found for them. Coal produced by the large plants in Macon County is shipped to Kansas City, St. Joseph, Omaha and other Nebraska points. The advanced price offered in those markets has raised the price at home, where the coal is produced. Macon consumers are now paying \$4 per ton and are buying heavily to avoid further advances.

All the coal camps in the county are as busy and full of life as a California mining community when a new gold strike has been made.

## TOWN OF BEVIER IS ENTIRELY UNDERMINED

The town of Bevier rests on pillars left to protect the roof of worked-out coal mines. From 130 to 150 ft. below the surface are "streets," "avenues" and "alleys," just the same as there are in the busy town above. But the underground city is now tenantless, the coal operations having been pushed far to the south, a haulage road keeping pace with the development.

In addition to the large mines operated by steam and electricity there are hundreds of hillside drifts where farmers dig coal to supply the local markets.

\*Macon, Mo.

Inspector George Hill figures that Macon County will shortly be far in the lead of all the counties of the state in coal production. This promises to be the best year of the industry's history in this region.

The original developers of the great coal beds of Macon County were Welshmen who had worked in the mines that extended under the sea at Cardiff. They belonged to a sturdy long-lived race. Most of them began in the mines as trapper boys. Old Welshmen will tell you that there is no healthier pursuit in the world than coal mining if one is careful and will keep out of the way of bell-rocks or kettle bottoms. The bell-rock is the terror of the Missouri fields. There seems to be no absolute method by which they can be detected, even by experienced miners. They are imbedded in the rock and have a shape similar to an inverted bowl. They are of great weight, and the joys and sorrows of life are over for the man who happens to be under one of them when it comes down. The great majority of the damage suits for death losses in mines grow out of the sudden fall of these rocks.

Of course, the main entries are timbered and cross-timbered, and so are the rooms where the miners work; but it is impossible to prop up every foot of roof in a mine, and the bell-rock often finds a place at which it can manage to slip through.

## MINERS LOAD HOLES BUT SHOTFIRERS FIRE THEM

In the Bevier fields, where the beds are thick, the coal is brought down by shooting. All the miners leave the mine at about 3:30 in the afternoon. A picked crew of shotfirers go down and touch off the cartridges previously loaded in the faces of the rooms by the miners. This is the most dangerous job in the mine. In circulating through the mine the shotfirers always go against the current made by the fans, and thus the smoke from the discharged cartridges flows out behind them.

The danger in shotfiring is that a fuse may be too short, or it may be imperfect, and when the shotfirer goes back to see why the cartridge has not exploded it may explode when he is in front of it. Of course, the shotfirer has to use his keenest wits in judging all of the conditions that are likely to confront him in his work.

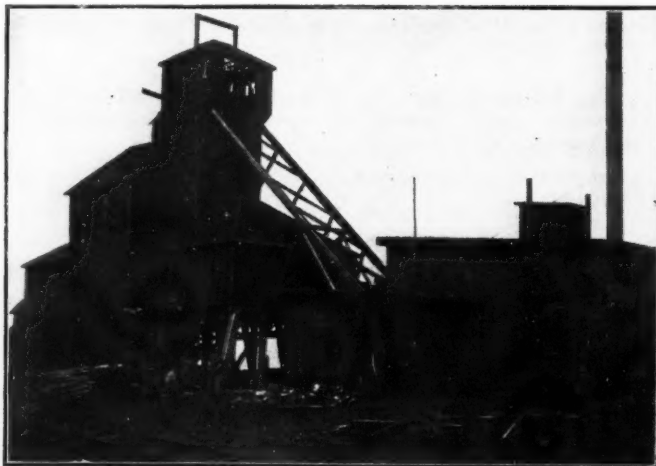


FIG. 1. HEADFRAME OF A MACON COUNTY COAL MINE

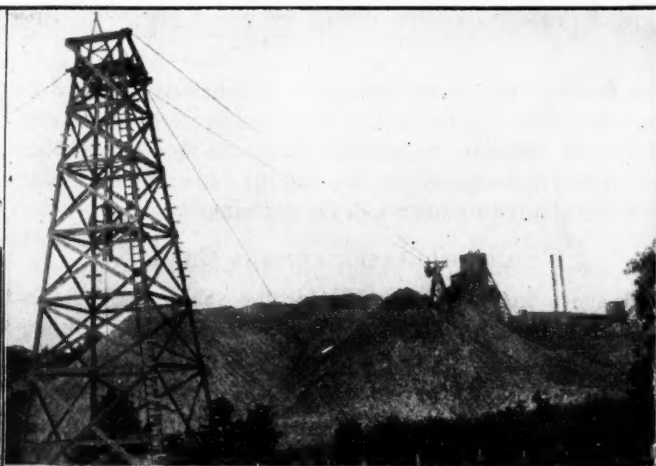


FIG. 2. DISPOSING OF WASTE BY AERIAL TRAMWAY



Shotfirers travel in pairs, one taking the rooms on one side of the entry and the other those on the opposite side. In going about their work they have to traverse every avenue in operation, wade through miles of slush, squeeze between loaded coal cars and the side of the entry, and all the time keep a sharp lookout for the roof.

It is said that sometimes after two or three heavy cartridges have been discharged in a room a queer growling noise in the roof may be heard as much as 300 yards away. Mining men say that along about midnight the earth becomes "uneasy" and that more rock and earth fall from the roof then than at any other time.

Dick Thomas, former state mine inspector, contends that coal mining and longevity go hand in hand. He explains it this way: "You never hear of a coal miner having consumption unless he contracted it before he went into the pit. Even then he finds that the peculiar properties of a coal mine are beneficial to his lungs, and he often becomes well and strong again by reason of his work underground. The air in a large coal mine, such as we have in the Bevier fields, is always kept pure, and it is free from germs. The temperature is regular. The elements in the coal are strengthening for weak



FIG. 3. SOME OF THE DRIVERS GOING ON SHIFT

lungs. We have a great number of men who have worked steadily in a coal mine and lived to be from 70 to 80 years of age, hardly ever losing a day through sickness. I know of a miner who died not long ago—Uncle Johnnie Griffith—a Welshman, who started in as a trapper boy when just about big enough to toddle and who kept at coal mining until he was past eighty."

Mr. Thomas, while inspector, took a notion to investigate the old men in the coal business, and he prepared a list of about 40 men between the ages of 65 and 85, all of whom were still working.

Physicians who have worked in coal-mining regions say that when a miner receives a wound, no matter how severe it is, it rarely suppurates or becomes inflamed. This is because there are no germs of inflammation in the miner's body. This indicates to the physician that there is some antiseptic action of the sulphur or the coal dust with which the underground worker comes in contact. Sulphur is an active germicide. The tendency of such agents is to prevent and eradicate tuberculosis.

The Welsh miners take great pride in their work or profession. They keep their rooms in good order and get

their coal out in good shape. They are regarded as reliable. But despite their love for working underground, many of them have taken up farming and have developed into as good farmers as they were formerly coal miners. Their places in the mines have been taken by Italians and local labor.

## Welsh Enter Mines To Evade Draft

The following item on recruiting in Great Britain is from the *Journal of Commerce* (London):

"The authorities desire more miners for the army. Clement Edwards, M.P., speaking on this subject at Pontypridd, said that after the registration scheme it was found that there were 29,000 men of recruitable age in East Glamorgan, and of this number not less than 12,000 to 15,000 had immigrated in the district from other occupations and had never seen the interior of a colliery before.

"If these men," said Mr. Edwards, "had remained in their own occupations they would have been in the army by now. If the miners had not rolled into the army in enthusiastic thousands there would have been no room for these immigrants, and, therefore, they must be placed back in precisely the position they would have been in had they not left their occupations." It is urged that the colliery comb-out should commence amongst those who were not in the industry prior to the outbreak of war.

"The Board of Trade announces that after consultation with the Miners' Federation of Great Britain recruiting will first commence among those of military age who entered the industry after Aug. 4, 1914, with certain exceptions, namely, winding enginemen, pumpmen, electricians, fitters and mechanics, and others."

## Big Mining Operations in the War

The *New York Times* publishes the following description of the tremendous mining operations that paved the way for the recent British drive against Messines:

This mining under the German lines had been carried on for a year or more by a number of tunneling companies from Australia, New Zealand and the British mining districts. It is hard, dangerous toil, for the enemy does countermining, and there were frightful moments when the men, who heard the working of picks very close to them, had to be rushed out lest they should be blown into the next world. Their own work was done quickly lest the enemy should discover the secret of these borings beneath their lines before the ammonal with which they were packed detonated.

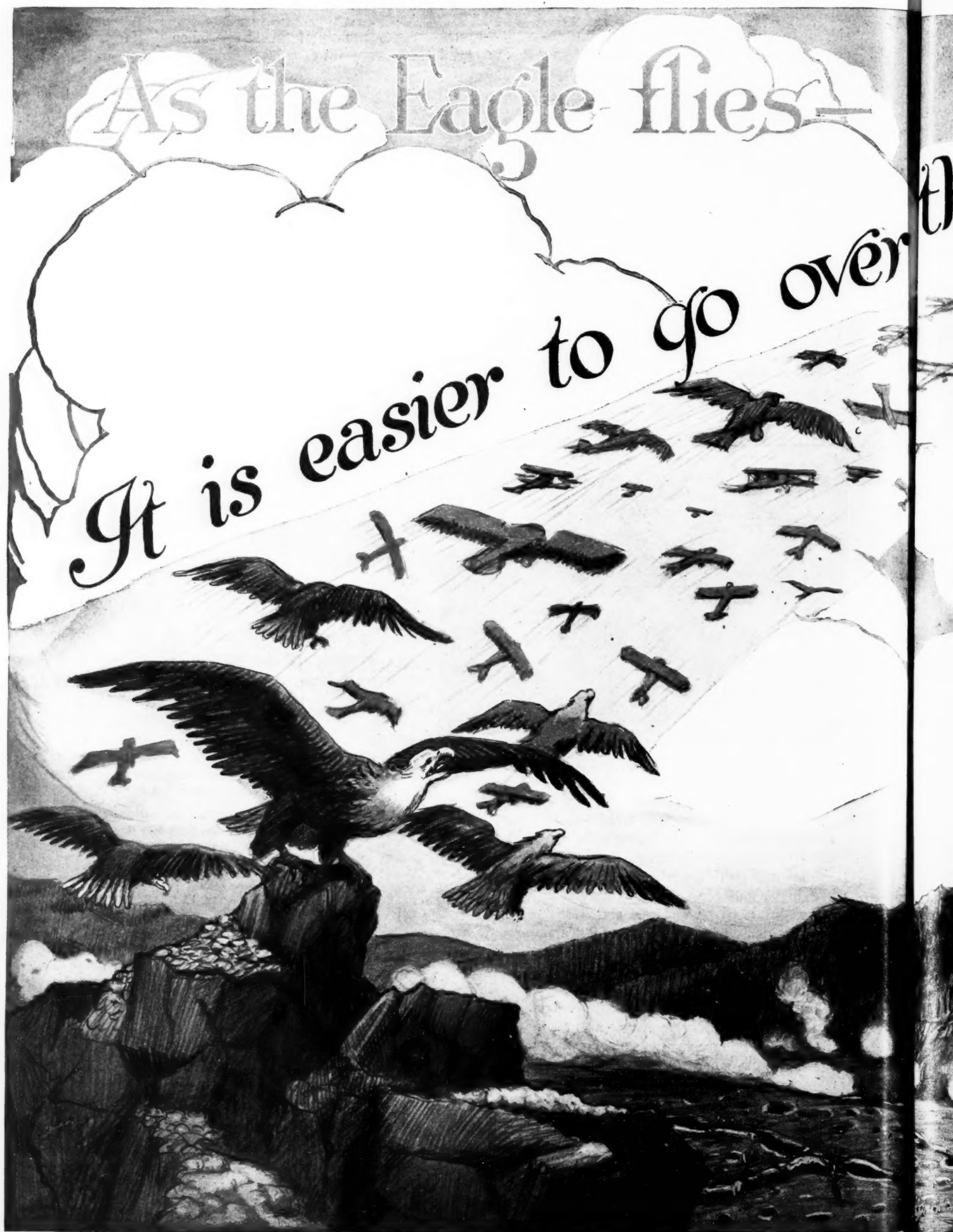
The frightful tremor made all the ground rock as if an earthquake had happened. Hill 60 opened and let forth a great eruption of flaming clouds. Some English troops took Hill 60 after this explosion, which flung some of them to the ground as they rose at the signal of attack. From a crater they dragged a dazed and terror-stricken officer who had lost all his company.

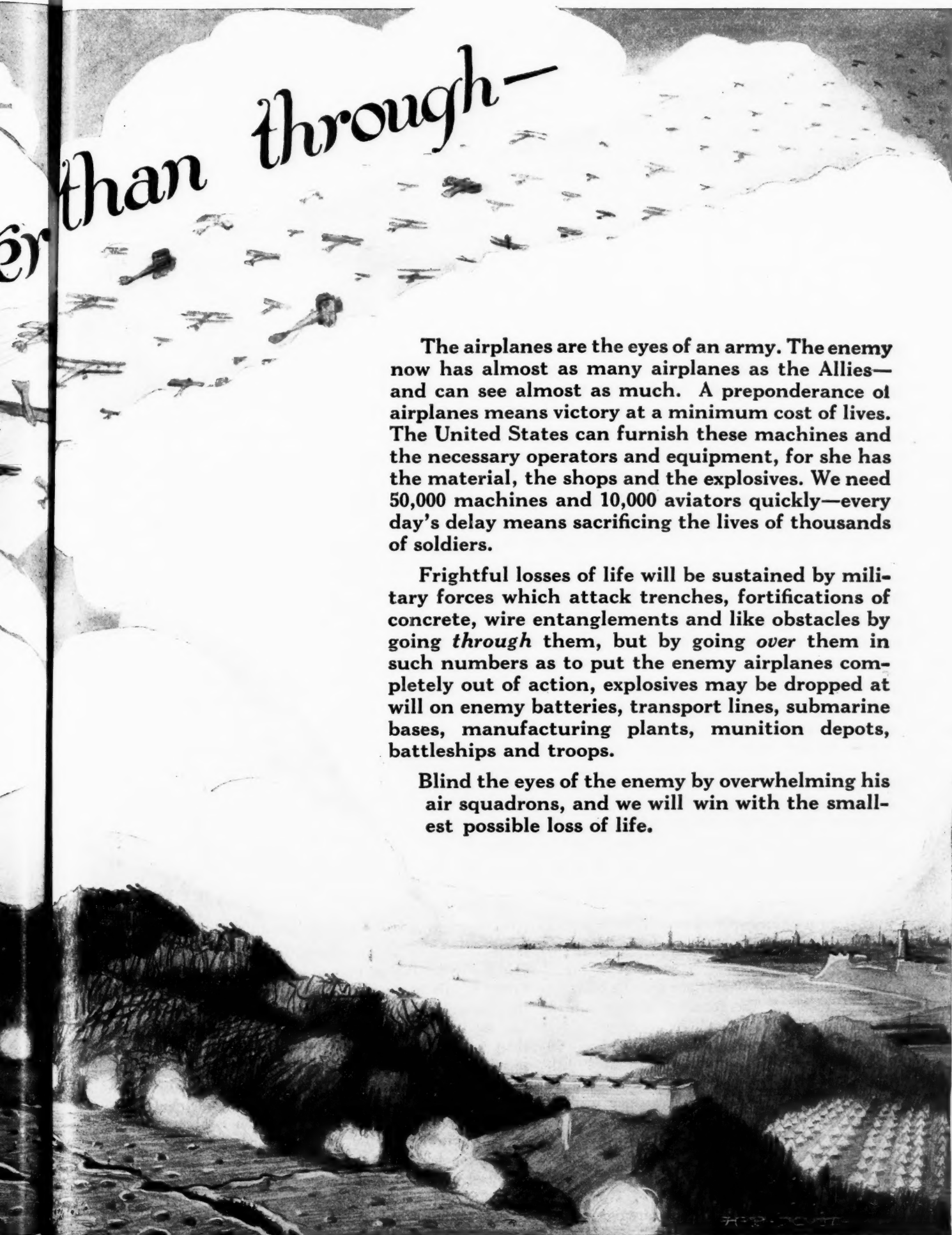
Most of those killed were buried as they died, buried under the masses of earth flung up by exploding shells, buried in their tunnels, which fell in upon them as they crouched under the drum-fire of the British guns hiding deep in those subterranean chambers, buried by the wild upheaval of mines which opened the earth beneath them with yawning chasms 300 ft. wide and 60 ft. deep.

Bits of tunics, rifles, rags and tatters of equipment, weapons and human flesh lie in holes and pools, protruding from rubbish heaps of the chaotic earth ravaged by British gunfire. Looking down into the mine craters, the vast Peckham crater or that by Maedelstede Farm where the primitive blue clay had been flung up above the topmost strata, I agreed with that German officer who came back dazed as a prisoner, and said: "This is more than human nature itself can suffer."

One human being, shattered in nerves and half senseless, was dragging himself back after Hill 60 had been mined, and he said he had seen only two men of his company after the great explosion. All others had been hurled skyhigh by the flames and gases or buried in the fall of the earth.







er than through—

The airplanes are the eyes of an army. The enemy now has almost as many airplanes as the Allies—and can see almost as much. A preponderance of airplanes means victory at a minimum cost of lives. The United States can furnish these machines and the necessary operators and equipment, for she has the material, the shops and the explosives. We need 50,000 machines and 10,000 aviators quickly—every day's delay means sacrificing the lives of thousands of soldiers.

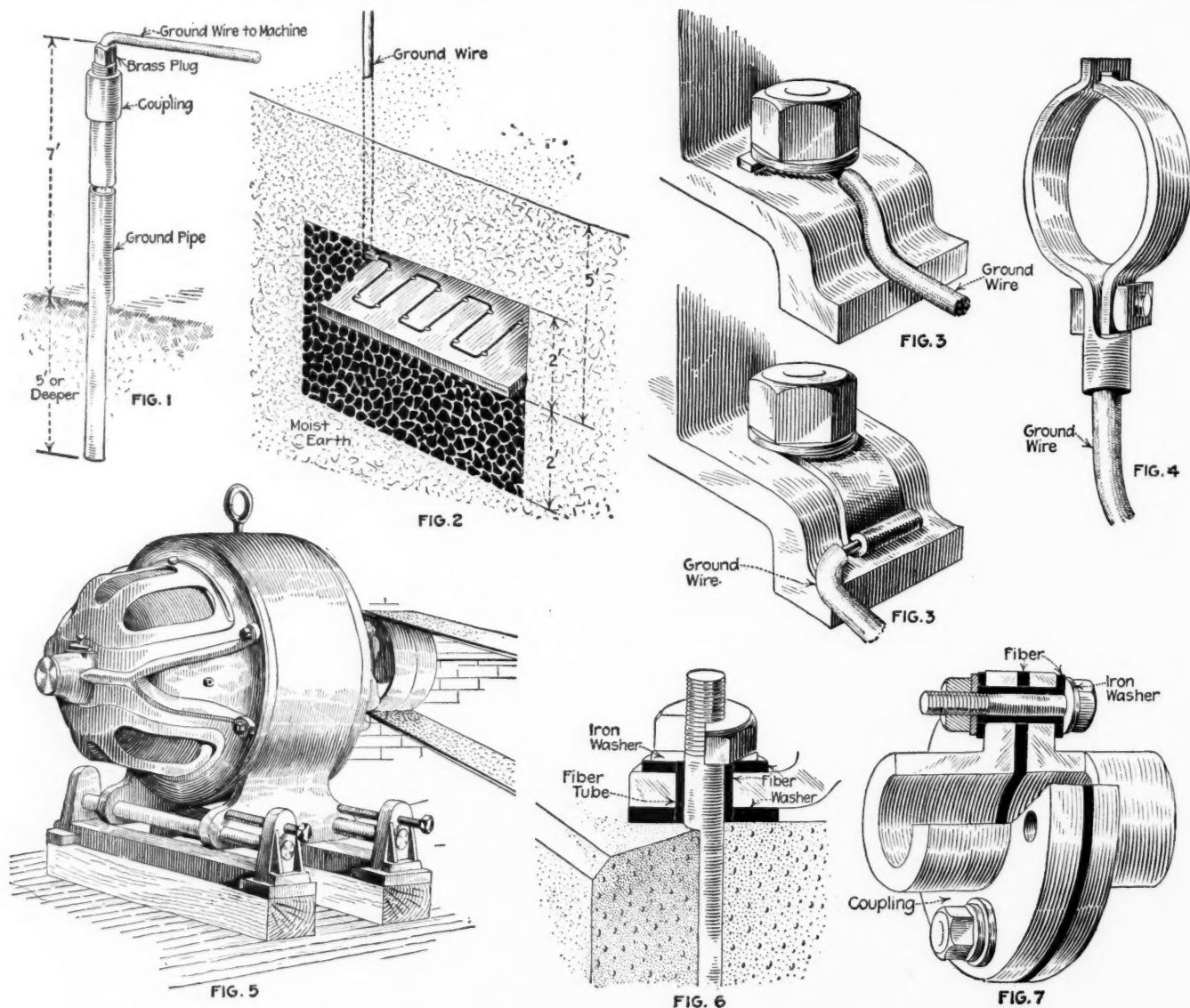
Frightful losses of life will be sustained by military forces which attack trenches, fortifications of concrete, wire entanglements and like obstacles by going *through* them, but by going *over* them in such numbers as to put the enemy airplanes completely out of action, explosives may be dropped at will on enemy batteries, transport lines, submarine bases, manufacturing plants, munition depots, battleships and troops.

Blind the eyes of the enemy by overwhelming his air squadrons, and we will win with the smallest possible loss of life.

## Electric Motor Grounding and Insulation

The necessity for the proper insulation of electrical apparatus is everywhere recognized. Electrical apparatus of all kinds, machines, conductors, etc., however well-insulated, should be considered as being alive and treated in such a way that under no conditions can a short-circuit or ground occur, and so insulated that leakage between conductors and between conductors and the ground will be reduced to a minimum. The mechanical

grounding wire is fastened to the pipe by soldering it to a brass plug screwed into a coupling that is placed on the end of a pipe after it has been driven into the earth. This is the most common method of forming a ground where no other means is available and is shown in Fig. 1, from *Power* of Jan. 2, 1917. Where several devices close together are to be grounded, the type of ground shown in Fig. 2 is to be recommended. This is composed of a copper plate to which is soldered the ground wire of copper. Ground connections may be



FIGS. 1 TO 7. DIFFERENT METHODS OF GROUNDING AND INSULATING MOTORS AND ELECTRICAL MACHINES

construction of the work should receive particular attention, especially the careful and neat running of wires, the making and soldering of connections and the securing and attaching wires from the terminal to the setting.

The National Board of Fire Underwriters' Code specifies that all motors operating on circuits of 550 volts or over must have their base-frames grounded. Galvanized pipe may be driven into the ground until it is in contact with permanent damp earth, extending at least 7 ft. above the surface of the ground, and 5 ft. below it if moist earth can be reached at that depth. If there is any difficulty about making good contact between the pipe and the earth, owing to lack of moisture, dig a pocket around the pipe to a depth of 4 or 5 ft., and pack pea-size pulp or charcoal tightly around it. The

made by means of the foundation bolts, as shown in Fig. 3. If this type of ground is used, it must be soldered firmly to the base. Fig. 4 shows a clamp for grounding through a pipe. If for any reason it is desirable to insulate the motor from the ground rather than to ground it, the base shown in Fig. 5 is recommended. This is made up of two wooden blocks and also provides a convenient means of belt tightening. If the machine is of a larger type and is mounted on a concrete or stone foundation, insulation is accomplished as shown in Fig. 6, by means of fiber washers on the foundation bolts. If the machine is direct-connected to the load and insulation is required, the shaft insulator shown in Fig. 7 is recommended. The fiber between the flanges should here be a disk rather than a washer.



## War Sidelights

Every employee at the Pennsylvania State Department of Mines subscribed for Liberty bonds.

The employees of the Valley Coal Co. held an interesting flag-raising ceremony at the plant near Krings, Penn., on June 15. C. C. Greer, an attorney, of Johnstown, was the principal speaker.

Pickands, Mather & Co., of Cleveland, large operators in the Pittsburgh Number Eight district, have shown their patriotism by subscribing \$2,100,000 to the Liberty Loan bonds. A large part of these bonds will be sold to officers and employees.

Coal men of St. Louis, Mo., subscribed to about \$250,000 of the Liberty Loan bonds, according to E. E. Squier, Jr., chairman of the Coal Men's Committee of the Chamber of Commerce. The committee, the other members of which are J. C. Muckermann, James C. Blythe and P. H. Woods, sold \$103,700 worth of the bonds to fourteen coal firms. Many bought through their banks and other channels. Mr. Squier's inquiries satisfy him that the total is at least \$250,000.

The St. Louis Coal Club, through its committee, composed of Louis F. Lumaghi, A. W. Hamilton and W. S. Walker, has raised from the coal men in St. Louis \$1680 with which to buy and equip an auto ambulance to be sent to France for Red Cross service. L. C. Sherrell, of the Consolidated Coal Co., and former sergeant of Troop B, Mo. N. G., who was for several months on duty at the border, is slated as the driver.

The following amounts were subscribed for Liberty bonds by the different coal companies. Dodson Coal Co. employees, Pottsville, Penn., \$27,000; miners employed by the Pennsylvania Coal and Coke Co., at its different properties in Clearfield and Cambria Counties, Penn., about \$175,000; employees of the Lehigh Coal and Navigation Co., \$500,000. In the Wilkes-Barre district employees of the Lehigh & Wilkes-Barre Coal Co. subscribed \$193,000 and the Lehigh Valley Coal Co. employees, \$350,000.

An informal meeting of bituminous operators and shippers sending coal to the New York Tidewater Market took place on Monday of this week at the Whitehall Club, New York City, at which the proposed rules and regulations to govern the pooling of Tidewater coals were discussed. There were between 50 and 60 coal men present and the chairman was T. H. Watkins, president of the Pennsylvania Coal and Coke Co., who was the presiding officer at the conference of operators held in Philadelphia on June 4.

Dissatisfaction was expressed with several of the rules, particularly No. 13, which provides that no one shall be permitted to ship coal to any designated consigning pool until he has given satisfactory evidence to the commis-

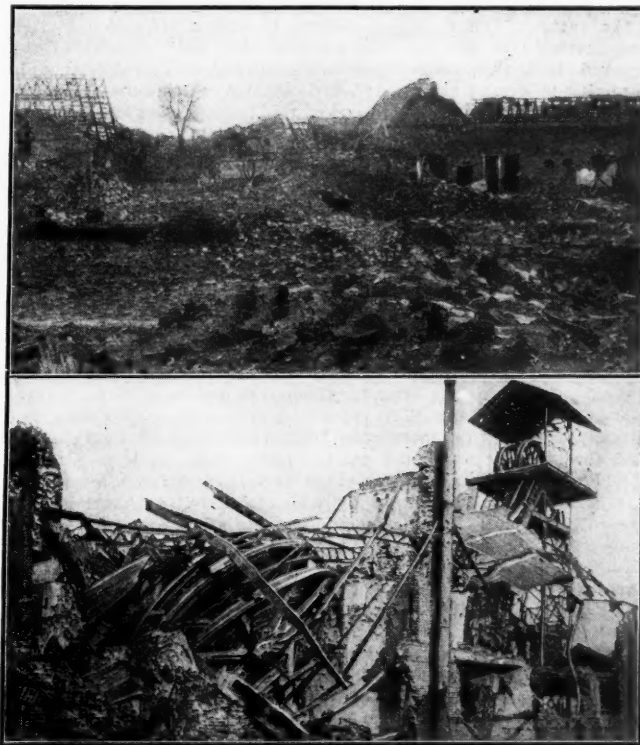
sioner that he has made proper arrangement for vessels. Some of the coal men thought this portion of the rule should be either altered or entirely eliminated.

Some fault was found with the classification of certain coals, it being contended that it was intended to pool grades that were not equal to one another. Some of the speakers believed that coals should be pooled according to analysis.

Another matter discussed was whether every operator or shipper to Tidewater was expected to be governed by the pooling arrangement, and whether an operator or shipper who had become dissatisfied with the arrangement could drop out.

After two hours' discussion, the meeting adjourned with the understanding that the New York interests would be represented at the conferences held in Washington on Wednesday, June 20, the coal interests meeting in the morning and a general conference of all committees with the Federal authorities in the afternoon. At the morning session, amid much applause, Rembrandt Peale, of New York, was selected commissioner of the Tidewater Coal Exchange. Mr. Peale is president of the firm of Peale, Peacock & Kerr, with offices in the Grand Central Terminal.

A correspondent sends us two photographs from a part of what was once known familiarly as "beautiful France." One shows Loos-en-Gohelle, a mining town of 4749 inhabitants just outside Lens, but now an utter ruin. Another is a silent witness of the damage done to the elaborately equipped mine shafts.



VIEWS OF DESTRUCTION AT THE FRENCH MINES

# The Labor Situation

## General Labor Review

The big event of the week, from the point of view of labor, consists in the appointment of five of the leading officials of the United Mine Workers of America to a place on the Committee on Coal Production. In addition, two other men are appointed who are rightly regarded as labor men; one is a former president of the United Mine Workers—John Mitchell—and the other, H. L. Kerwin, is secretary to the Secretary of Labor. As William Bauchop Wilson, the Secretary of Labor, was a founder of the United Mine Workers and secretary-treasurer after it was formed, occupying that post for eight long years, it is clear that in Kerwin the mine workers will find a friend not only to themselves personally but to their organization also.

### United Mine Workers Will Have a Large Vote

It must not be thought, however, that the mine workers and operators have now an equal vote. There are nine operators on the committee, a byproduct manufacturer, two directors of national bureaus, a coal consumer and a secretary who has long been connected with the coal industry.

But the mine workers have a strong vote, and as they will act as a unit they should be able to prevent any action which they do not like. The presence of so many nonproducers on the committee makes the position of the mine workers stronger than it would otherwise be. The personnel of the mine workers is given in full in the Washington news item for this week.

The anthracite region is working steadily, and the men are proving thereby that they fully feel the obligations of good citizenship. Central Pennsylvania also has a surcease from strife. A settlement between the union and a small coal company in western Pennsylvania after a 13-months' strike exhibits the trend toward unionism that has resulted from the war, and the arrest of some dynamiters at a mine which persists in nonunion operation has given Fannie Sellins, a labor agitator, a chance to prove again that the better labor unionists have no liking for the slaughter of those who oppose their organization.

The miners of the Kanawha region in West Virginia are seeking increased wages to accord with those granted recently in the New River and Pomeroy Bend fields of West Virginia and in Indiana, Illinois, Ohio and Western Pennsylvania.

### Rapid Spread of Labor Unionism in the South

In eastern Kentucky and eastern Tennessee incipient strikes and attempts to prevent unionization have both yielded to the demand that the nation's needs be placed first. Alabama is becoming unionized rapidly and without any exhibition of disorder.

In Colorado the new members of the United Mine Workers are spoiling for a strike, believing that it was thereunto that they were organized. The international board will be able to convince them otherwise. When they see that money is not forthcoming from the international exchequer they will be quite easily brought to see matters in a clearer light.

Security will, of course, not be felt till the far West has solved its wage problems and lined up in a degree with the far East. Increases of cost of living are similar East and West, but the West has a problem of its own in the oil fields. However, the Canadian strike and the removal of Australia as a competing coal center are favorable elements in the situation which should enable the West to give the mine workers all the raised cost of living would indicate. Canada has already given this and may have to give more, and really the West should give no less. Montana has already settled this matter to the satisfaction of both parties and the other areas should quickly follow suit.

The Montana coal mine workers have made an agreement with the Montana coal operators by which the contract, which is to expire September, 1918, is modified to the advantage of the mine workers. The result was obtained during a meeting held at Billings, Mont., May 21, 22, 23 and 24. The new scale will increase earnings about 50c. per day. It was signed by F. W. C. Whyte, R. W. Wilson, H. S. Hopka, James Needham, M. F. Purcell, J. F. Brophy and C. C. Anderson on behalf of the operators, and by Stephen Ely, John Smith, Samuel Dow, Nels Nelson, John Flaherty and Robert Condon on behalf of the union.

All the Canadian fields are having labor trouble. In the West it seems certain to everyone—the Government, the International Committee, the public and even the district leaders—that the men are at fault. The Eastern situation is not yet made so clear, nor has the unrest reached an equal state of development.

## Demand on Labor for Larger Output

The anthracite mine workers, harried by the mine operators to produce more and more coal, will hardly believe that at a meeting in the Court House in Brooklyn on Monday night it was alleged that the operators were in a conspiracy to reduce the output of coal, so as to sustain prices. This ridiculous charge was made despite the fact that more coal is being produced than ever. One speaker declared that the operators were trying to prevent the miners from producing more than a certain minimum tonnage per day and were compelling the miners to leave the mines early.

The following quotation from a New York "Tribune" news note shows a truer conception of the existing state of affairs, though we are disposed to absolve the union as a whole of any desire at present to reduce production.

### Prohibition Is Needed for Greater Output

The most thoughtful men familiar with the labor problem in the anthracite district, mine owners and others, are hoping for national prohibition as a war measure and as the best means of insuring high efficiency in the ranks of anthracite labor. The mining companies are doing everything possible to push production. Because the handling of coal cars by the railroads is now more efficient, it would be possible to make larger shipments from the mines if an adequate supply of labor could be obtained to insure the maximum output.

Although the miner is getting today the largest wage that he ever received, and although his family probably enjoys greater luxuries than it ever knew before, he concerns himself very little about the future. The mining companies would be glad to pay their first-class men from \$7 to \$10 a day, if they would only bestir themselves in the effort to enlarge the production of anthracite coal.

But the average miner will do nothing of the kind unless his union favors such action. There is an unwritten law at many of the mines that five or six carloads of coal should constitute a day's work. There seems to be a prejudice against increasing this output, and unless drastic measures are resorted to, it may be impossible to increase it.

### General Dougherty Secures Only Promises

Only the other day one of the local unions, after hearing a stirring address by General Dougherty, passed a resolution favoring sustained work so as to insure increased production. The men were enthusiastic about it for a while, and contended that they would not take any more holidays. Some declared they would be willing to work on the Church holidays, in order to make it possible for the companies to respond to the nation-wide demand for an adequate coal supply. Officers of the mining companies were skeptical when they heard of this change of heart.

The test came within a few days when a Church holiday came along. Arrangements were made with the priest to hold mass at 5 a.m. for the convenience of those workers who wanted to begin the day right by attending a religious service. The men were faithful enough in attending the mass, but not one of them showed up for work at the mines that day.

Most of the miners feel their social obligation as much as any one. They are showing a sense of this duty by larger output, steadier work, and by a reduction in the number of their complaints. The Susquehanna Coal Co. did not get all the results promised, but what can you expect from a large body of men over whom no one can exercise perfect discipline? Only as the desperate situation of the public reaches the mining field and reveals to the miners the great needs of the people can they be expected to do their utmost to relieve the situation.

### Still There Are Strikes in Anthracite Region

Strikes, however, are still arising, to the great annoyance of the public, the officials of the United Mine Workers and the coal companies. Thus, on June 12, the mule drivers employed at the Nottingham mine of the Lehigh & Wilkes-Barre Coal Co. went on strike and because of their own small grievance, affecting only a few men, tied up the colliery.

The Delaware, Lackawanna & Western R.R., Coal Department, at Duryea, in the Northern field, has a peculiar difficulty. At its Hallstead colliery there are a few men of nondescript persuasion who have joined the Christian Alliance and claim that their faith prevents them from being "unequally yoked with unbelievers," and that they may not join the union because it is an organization not within the "household of the faith."

The union men do not acknowledge the validity of such scruples and as a result came out on a button strike June 15. In consequence 500 men are out of work. Superintendent R. P. Thomas, thoroughly tired of these violations of a contract duly entered into by the union, directed the employees to remove their tools. The foremen were told their services were not wanted, and the fires were drawn beneath the boilers. The mules also were hoisted.



One cannot blame the Christian Alliance from refusing to join in with the United Mine Workers at Duryea, for a body of men who do not keep their written word in an emergency like the present are not fit company for a man of conscience to yoke with. But in the twentieth century it seems odd to read a statement like that made by one of these Alliance men: "I will not join the union unless God in a vision reveals to me I should break His law and join an organization outside of His church."

The folk of Duryea are much troubled, for the colliery is the town's main support, but the men who work there seem utterly indifferent. The company has been at great expense to reclaim the mine, which was for a time flooded with water. On June 13, the National mine of the same company, a somewhat larger operation near Scranton, had a button strike without any outstanding features.

Last week we recorded the strike for concessions to consideration miners at No. 14 colliery of the Lehigh Coal and Navigation Co., near Tamaqua, Penn. This strike ended June 15 at the request of Thomas Kennedy, the president of the seventh district, who promised the men that, if they would go to work, the concessions for which they sought would date from the time of the trouble.

## Union in the Pittsburgh District

The union has scored a victory in western Pennsylvania at the mines of the Cornell Coal Co., where the men have been on strike since Apr. 1, 1916, a year, a month and a week since they went out. The company has signed the wage scale. The McFetridge and Creighton mines are still on strike.

At the latter mines two Greeks, Harry Nabras and George Peppes, were arrested and held for court June 8, the charge, which is that of conspiracy, being brought by Charles Craig, superintendent of the Creighton Coal Co. The men purposed to dynamite the home of Mr. Craig, to destroy a coal bridge and to blow up with dynamite the homes of nonunion miners. Bell Nekas, another Greek, was arrested on entering the municipal building of Tarentum during the hearing. He is thought to be implicated.

The whole event throws a clear and favorable light on Fannie Sellins, an agitator who got to be well known because of her violation of the injunction of Judge Dayton relative to the unionizing activities of the United Mine Workers in the Panhandle of West Virginia and was condemned to serve a prison sentence. Miss Sellins was requested by the Greeks to provide \$200 as payment for the violence they meditated. She notified the authorities and was told to lead the Greeks on.

She arranged a meeting with them in the Mine Workers room in the McAllester building, New Kensington. Justice of the Peace Conway and Constable Charles Horne concealed themselves in an adjoining room and heard the two men unfold their scheme. The Greeks had obtained work as nonunionists and thought that this fact would screen their nefarious plotting.

## Kentucky and Tennessee To Be Quiet

The prospects of a strike in eastern Kentucky appear to have cleared away in the last week or two. From all reports the progress of the unionization of the mine workers in eastern Kentucky and eastern Tennessee has been rapid. The men so organized were said to be contemplating a strike so as to secure the much coveted recognition. Some of the companies, it is said, had been attempting to oppose the unionization of the mine workers and it was thought that the latter were preparing for a test of strength.

The mine workers as organized are without funds. That, as often has been proved, does not prevent a long and bitter strike when the trouble is purely local, if other districts can only be interested sufficiently that they will help with funds, the lack of money in the region striking is found no drawback to a successful strike. But the union would be generally condemned if it started a strike to secure recognition under conditions like those at present. It is one thing to continue a strike, as in the Pittsburgh district, where a closely localized strike has been going on for 13 months, and another to start a strike in a moment of severe national stress.

The latest intelligence from eastern Kentucky and eastern Tennessee is to the effect that representatives of the Federal Government have indicated unmistakably to both operators and workers that strikes or lockouts at this time would be most inopportune and against the interests of the nation. It is intimated that strikes to build up the union or discharges to prevent its development will be dealt with vigorously by the administration, which realizes its responsibility to keep domestic peace during the war. It is stated that certain employees reported as discharged have returned to work.

## Alabama is Now Being Unionized

In Alabama there has been an extension of union activity, and a local has been formed at the Virginia mines of the Gulf States Steel Co. At the meeting called for that purpose the statement was made that the miners were organizing for the purpose of keeping the men at work and insuring a steady output of coal. Whether that is the real purpose or not it shows that a proposal to start a strike would be unfavorably received by the mine workers themselves at such a time of stress. These evidences of patriotism among the mine workers are extremely gratifying.

Union activities are also reported in Jefferson, Walker and Tuscaloosa Counties. The parent body has hitherto only maintained a skeleton organization in Alabama, as is shown by the report prepared for the Indianapolis convention which placed the fully paid membership in November, 1915, at 30. These members comprised district No. 20. When the vote was taken on the McAlpin agreement early in 1916 only 31 voters cast their ballots. Apparently the union has been more active in the state during recent months.

## Colorado Men Want To Strike

There has been some unrest in Colorado. The United Mine Workers at the mines of the Colorado Fuel and Iron Co. are dissatisfied with the "Rockefeller plan" of cooperation between mine workers and officials. John McLellan, spokesman for the local union officials, says that the national officers have been asked by wire to authorize a strike. They will, of course, do nothing of the sort. There is no wage grievance, and a strike just now would be a perfidy of which the international board would not be guilty.

It is said that the desire for a strike is not confined to the men of the Colorado Fuel and Iron Co., but is common to the whole district, the men being incensed because J. F. Welborn, the president of the Colorado Fuel and Iron Co. and committeeman for Colorado, New Mexico and Utah on the Committee of Coal Production failed to meet with the union at Denver June 13 though so requested by James F. Moran, president of the district union. At that meeting the mine workers and operators, the latter not representative men, passed a resolution calling on all persons to support the Government "in this tragic struggle for human liberty." By that they evidently meant that the companies should knuckle down to the union.

John R. Lawson, at one time president of the Colorado district, and international board member, has been suspended for accepting a position as labor agent for a coal company. It will be remembered that Mr. Lawson was convicted of murder in connection with the strike in the southern Colorado coal fields which occurred in 1914. The attorney general has recommended his freeing, but his case is still before the Supreme Court.

## The Strike in Western Canada

The mine workers in western Canada have long been conceded a substantial wage increase. Their district leaders weeks ago practically accepted the concession. They were not empowered, of course, to accept finally, but they were satisfied to agree to it tentatively and undertook to present it to the men in a referendum. The men turned it down and went on strike.

The international board of the union with a proper sense of duty to its principles and to the best interests of the allied nations and above all to the interests of the striking mine workers ordered them back to work. The board also censured them from going on strike without permission from headquarters.

The district board, however, sided in with its mine workers and ordered them to continue striking, though it could find no way to finance them. The international board, on the other hand, wanted the men to work, while negotiating, their wages to be those paid Mar. 31 and to include the two war bonuses then being paid. The old negotiations were to be ignored. The board agreed to send a committee from headquarters to arrange an agreement if its terms were complied with.

As a last resort Robert F. Green, the local member of parliament for Fernie was commissioned to make an inquiry as to the course of action the Government should pursue. He found nothing could be done to bring the parties together and consequently it is expected the Dominion Government will assume the running of the mines and order the men back to work.

There have been intimations that the men's demands will be granted by the operators of the Grand Trunk Pacific section. Among their operations are included the large independent plants known as the Mountain Park, Pacific and Yellowhead mines. These collieries and those in the Brule Lake region along the Canadian-Northern Ry. are not represented in the Western Coal Operators' Association. The 1000 employees of the Western Fuel Co. at Nanaimo, B. C., were offered recently a 10 per cent. increase in wage to take effect July 1.



## Editorials

### Fuel Board Is Enlarged

We are pleased to note that the Committee on Coal Production has been enlarged to include representatives of labor, much as we regret the means by which the change was brought about.

If, in his attacks on the committee, Mr. White had said merely that he felt that labor should be represented, and had asked how it could be represented otherwise than by taking the officers of his organization and by taking them in such number as to make their strength a power in the committee, such a power as to make certain that no report would come from the committee which would not be equally acceptable to capital and to labor, then nothing could have been said against Mr. White, though some might have traversed his contention.

But Mr. White and his men are now on the board, and the board loses nothing, for they are competent men and patriotic, and they can see as far as any others into the problems to be met. In fact, the board is bettered, for it is broadened, and work which would otherwise require travel and persuasion will be done without either.

The coal industry is now one. May it be "now and forever, one and inseparable"!

### Plan To Pool Tidewater Shipments

Plans for pooling coal seem to promise no great disturbance to the various shippers. Coals of different quality may be segregated, it now appears, and this will of course diminish the advantage it was intended to gain by a pooling arrangement. If there are to be seven or eight classifications, it will simplify the accounting, but the advantage to any but the small shippers will probably not be very great. The larger shippers are themselves pooling the output of numbers of mines, and their volume is so heavy that not very often are their ships detained for coal when rival shippers are able to load.

In other words, the experience is that when one big agency is affected, most of the others are similarly affected, and the pooling of just standard Pocahontas and New River, or any other grades by themselves, is hardly likely to accomplish much for the shippers. The Government, along with other large buyers, has often accepted coal for a single ship from five or six or even more shippers. If all grades were to be pooled together in one pool, and a fair basis of adjustment could be worked out, there would be a great gain to the railroads, movement would be accelerated and car service correspondingly improved.

Something of this kind has already become almost customary with New England contractors who operate their own ships. In many instances the past season they have bought or accepted lower grades simply to get cargoes cleared. It is not unusual for distributors in New England to have contracts with practically all the larger agencies with the same end in view, drawing relatively small tonnages at a time from each. That being the case

with most of the larger factors, it is hard to see how any striking benefits can be evolved at Newport News.

It is, however, well worth making the effort if there is a gain of only a hundred cars a month. Pooling is expected to have an unfavorable effect on preparation at the mines.

### What Is a Prime Essential?

Coal, we are told, is a prime essential of life; and it surely is. Therefore, some say, it should be supplied at "cost plus." But some other products are not so necessary, and they can be sold at what the traffic will bear. Very good. For the sake of argument, let these premises be conceded.

But the clever propagandists who have propounded this argument, or rather have instilled it in the public mind, for they have not worded it so crudely and directly as we have, fail to note that when the product itself is not so necessary to the public the material used for the manufacture of the product is also not so necessary. Inasmuch, therefore, as coal enters into that industry it is essential to the industry, but not essential to life. Inasmuch, also, as the product obtained partly by the use of coal is not limited in price, why should the price of the coal entering into that product be regulated?

The position of many of those who are crying most loudly is not at all logical. Unfortunately, their cry sounds plausible, and hence it is a folly to deny the risk that when the question comes up "Shall the necessary be curbed and the unnecessary go scot free?" the ayes will have it.

### Coaches or Box-Cars for Miners?

Many of the mine workers in the coal fields of Indiana travel long distances by street car and railroad in their daily trips to and from their respective mines. A movement for better accommodations for these commuters than have hitherto been granted has been set on foot in Clinton and it is safe to say that this movement will spread to other districts similarly situated, and where travel to work is in like manner made needlessly trying.

The steam-railroad companies usually furnish box-cars for this service. Box-cars are uncomfortable conveyances at best, and in the winter, despite the stove, they are drafty and cold. They also jolt the men excessively, and are dark, gloomy, insanitary and unsafe. In order to keep in the light the men congregate near the door and when a stopping place is reached they leap from the cars regardless of the extreme hazard involved in jumping over four feet from a moving car without a handhold for guidance. It may be well said that the railroad is not responsible for hazards to which the men willfully expose themselves, but the tendency of the times is to remove all conditions that may present anyone with a temptation to risk his life without need or advantage.

The men have a right to better accommodation. Regular day coaches, in which the mine workers could have some comfort, should be supplied by the railroad companies. It would seem as if the box-car had been chosen not so much for its cheapness as for its discomfort. The sentiment has been that people who pay little should receive little. The railroads are apparently afraid that the occasional passenger will object to paying a reasonable fare should the wholesale buyer of transportation get treatment as liberal at a much lower rate.

But commuting is a well-established institution. It is generally known that profitable passenger traffic is to be secured only when the railroad knows just how many are to be accommodated on each trip and can fit its seating capacity to the need.

The workingmen of the Indiana field are entitled to more comfort in their transportation to the mines. The men now go to points on the railroad other than main stations to catch their trains. It is well, perhaps, that miners in their working clothes should not mingle, even in the waiting rooms of the stations, with the general public who may be in holiday attire; but there is no reason why the railroad should not supply a warm place for the men to wait in until the arrival of the train.

The men, whose almost daily fate it is to be stowed like cattle in box-cars, have a long day before them or leave a long day behind them and are tired. Their energy needs better conservation, and surely there are lots of old passenger cars which will serve the purpose better and cost no more than box-cars, if as much.

The distances the men travel are getting longer, and we are glad to see that the business men of Clinton and the mayor and city council of that enterprising town are behind the movement to abolish the use of windowless cars for human beings.



## A Problem in Good Citizenship

At the meeting of the West Virginia Coal Mining Institute, Frank Haas gave some details regarding an excellent plan for helping the railroads by providing bins for storage. He was asked whether the company received any increase in its allotment in return for this service to the railroad and to the public, and, without comment, replied that it did not.

He added, however, that the coal company was bettered, owing to the fact that it could run more satisfactorily when it had the bin storage to steady the operation. We suppose he meant that when notice had been given that the mines would run, they could be operated even if cars failed to make their appearance or arrived late. Also, if the working day wore to a close and the railroad car capacity failed, the mine could, by dumping to storage, continue operating till the day was ended. This plan is of assistance to the company's mine workers and divides their time into definite working days and holidays.

Mr. Haas ended without drawing any inferences, but his statement is provocative of thought. The advantages of storage to the operator, which we have just enumerated, are hardly enough to induce him to go to so large an outlay. The country and the railroads fail to get the service indicated from the coal companies because the railroads which are benefited are not allowed to grant those who furnish it any favors in return.

The same trouble has arisen from the fact that companies which furnish their own railroad cars are not allowed an extra allotment. As a result the producing companies have pretty generally decided that they will not own railroad cars, and the shortage which might in that way have been avoided is now upon us. No operator wants to buy cars for the benefit of a competitor who will buy none.

The \$30,000 which might go into furnishing a bin or the \$800,000 which might be expended in buying railroad cars to the great benefit of the railroad is diverted to the opening of a new mine, which work just now only makes railroad operation more difficult. The operator is quite apt to prefer an expenditure of money on a mine which is not wanted, as he thereby increases his allotment, whereas erecting a bin or buying railroad cars which *are* wanted will not entitle him to a single extra car beyond the regular allotment. He is not even entitled to claim one of his own railroad cars if giving it to him would result in his having more cars than the proportionate capacity of his mine would entitle him to.

If \$800,000 expended in a mine entitles him to more railroad cars, surely \$800,000 expended in equipment which benefits the railroad should be regarded as even a larger cause for increased allotment. It has been thought that this ruling that bases car supply on output puts the small producer on a level with the large producer. But it does not; the richer producer always gets the larger allotment because he has the larger mine output. In any event his wealth buys increased allotment and the objection to the ruling is that his wealth is spent in a way that does not profit the railroad or the country.

We believe that the action of the Consolidation Coal Co. is a further mark of its sense of responsibility to the public, or, at least, of a willingness to coöperate with the railroad with which it is on friendly terms. Its action should be widely imitated. But such coöperation should not go unrewarded. There are few persons who are willing to expend their money for something which does not profit them commensurately with the outlay, and it does seem that the buying of coal cars and the erecting of bins should give an operator some advantage over the man who does none of these things, and over the wagon miner and the slack-pile reloader whose business will end as soon as the war is over.

The wagon miners do not even provide their own side tracks or prompt methods of loading, and yet the Interstate Commerce Commission takes them under its wing. Why be efficient and good citizens if efficiency and good citizenship are to be unrecognized? That is a thought which must steal and does steal into the mind of a man who is asked to spend \$30,000 for a coal bin at each mine and is not able to increase his output thereby. That is how he feels when he is figuring on buying railroad cars to keep his mine in operation.



The big annual Equipment Number of *Coal Age* will appear July 21. We want dozens of articles covering haulage, pumping, ventilating, mining and power equipment; in fact, any kind of machinery that is used in the production of coal. All articles are to be in our hands by July 9. Start yours today. Whether your contribution is long or short it will be equally welcome.



## Department of Human Interest

### Two Important Anthracite Mine Schools

Receiving but small measure of the wide recognition its usefulness deserves, the Mining and Mechanical institute of the Anthracite Coal Region of Pennsylvania, at Freeland, has for almost a quarter of a century given an invaluable service to its near-by communities. Founded by the late Hon. Eckley B. Coxe, a pioneer operator, as a night school to teach mining, its scope was rapidly broadened to include college preparatory work in classical as well as scientific and technical courses for both night and day classes. Scores of its graduates are now in high positions with mining and industrial companies.

The school was organized in 1893, and night classes were taught a course in elementary mining by two instructors. In the succeeding year, eight rooms were engaged, six teachers placed in charge, and a college preparatory course added. In 1901, a day school for students desiring to enter college was organized, and in 1904, the day teaching force was increased to three members. During the present term there are fifty boys in the day classes, and eight instructors are in charge of 120 pupils in the night schools.

Since 1903, the students have had the use of a commodious brick building, containing six classrooms, a large drafting room and a library of 1200 volumes. In 1914, a second building was erected with a room for manual-training appliances and a chemical laboratory. In providing those structures the directors, many of whom are officials of mining companies, received the assistance of Mrs. Eckley B. Coxe, who donated \$25,000. Voluntary contributions help in meeting the expenses of the Institute, as the tuition fees are merely nominal.

The success of this unique institution is due largely to Prof. W. A. Brady, the principal, who has served since 1901. An advisory committee, composed of the provost of the University of Pennsylvania and the presidents of Lafayette College and Lehigh University, takes an active interest in the school and coöperates with the faculty in maintaining a high standard of scholarship.

The Pennsylvania State College extension school of engineering at Wilkes-Barre, Penn., the most recently organized among the educational agencies which serve the young men in the anthracite region, has completed its first year's work. Since its opening in October, large classes composed of employees from the mines and various industrial establishments have taken advantage of the opportunity to train themselves along technical lines. There were 59 students granted certificates of credit for successful work, and special prizes and mention went to a number who excelled in their studies. The subjects in which awards were made included concrete work, electricity, mechanics, elementary mechanics, arithmetic, geometry, trigonometry and surveying.

Henry Doust, Jr., a graduate of the Massachusetts Institute of Technology, and a member of the State College faculty, has been the supervisor of the school. He has the assistance of a volunteer teaching corps of

graduates of State College and other institutions—young men now in important posts with the coal companies and other industries of Wilkes-Barre and vicinity.

### Wants To Hold a State Meet

A correspondent who disguises his name as "Safety" sends us the following form for a circular letter:

To the Coal Operators and Miners of Pennsylvania—Before the compensation law in Pennsylvania went into effect some of the coal mines already had first-aid teams and were working hard to promote safety. Since Jan. 1, 1916, when this law took effect, nearly every mine has had trained men, first-aid teams and some mine-rescue corps trained in the use of the Draeger and Fluess apparatus. These teams through long practice and first-aid meets have acquired a high grade of efficiency.

What do you think of holding a meet to determine the championship of Pennsylvania? This meet could be held on Labor Day, Sept. 3, at some central point. Let the different districts hold meets through the summer and select the best team. Meets could be held in some point in Cambria County for that district, in Clearfield for the Clearfield district, and in Boswell for the Somerset district. The anthracite region could hold a similar local meet.

Doubtless the National Safety Council will coöperate and give prizes if the idea meets general acceptance. Of course, the anthracite region deserves a larger measure of representation than our correspondent would give it. It might be surprising to him to learn that the bituminous and anthracite regions of Pennsylvania have approximately an equal number of mine workers.

### Mining Institute at Thomas

The institutes started by the Davis Coal and Coke Co. now have a membership of nearly 1100. A year ago there were about 273 members, and the work is constantly progressing under the management of Charles L. Fay.

On May 19 the second annual meeting and dinner of the Thomas District Mining Institute was held at Thomas, W. Va. The members of the local institutes of Thomas, Coketon, Davis, Benbush and Pierce were all present, as were also those of the Thomas-Coketon Colored Institute.

The festivities started in the afternoon with the raising of a flag presented by A. W. Calloway, president of the institute and of the Davis Coal and Coke Co. The flag was raised to the top of the pole by the united effort of a number of school boys and girls from the Thomas schools.

The flag-raising was followed by a parade of school children, and at 6 p.m. the institute members themselves paraded, the several divisions being headed by the Thomas, Coketon, Pierce American and Pierce Italian bands. There were also several floats and decorated automobiles.

The evening session of the institute was held in a big tent brought from Cleveland, Ohio, for that purpose and measuring 80 x 110 ft. Apparently four bands were not enough to make so large a crowd merry, so the Kempton band was added. S. J. Harris, a miner, of Coketon, made the opening address as toastmaster, and though this was his first attempt, he showed his ability as an orator. Addresses were made by A. W. Calloway, Mike Perchon, of Benbush, and R. P. Maloney, vice president and general manager.

For the banquet 447 lb. of beef were provided which had been put into fireless cookers in Chicago and expressed through to Thomas under the care of Mr. McLuckie. In a similar manner 250 lb. of beans, baked in the ovens of the Davis bakery, were brought in sealed jars to the table. It is not necessary to say more about the catering except that it was generous and appropriate.

The members of the West Virginia Mining Institute still have a warm spot in their hearts for W. C. Montignani, of the Railroad Y. M. C. A., who sung himself into their affection at the meeting they held some years ago in Cumberland. This same whole-souled Montignani sang some of his tuneful Scotch songs at Thomas, to the great delight of the institute.



## Discussion by Readers

### Working Contiguous Pitching Seams

*Letter No. 1*—Replying to the request of Joseph D. Lewis, for suggestions in regard to the best method of working two highly pitching seams separated by a slate parting 6½ ft. thick, *Coal Age*, May 26, p. 930, kindly permit me to submit the following, which illustrates the method we employed in working a similar proposition, except that the slate parting was 9 ft. thick in our case.

Mr. Lewis asks that two cases be considered—one in which the slate parting is weak and falls readily, and the other where it is hard enough to stand up well while the coal is being taken out. The former I will call Case 1 and the latter Case 2, treating them separately in this order.

Case 1—Having driven the tunnel to the first seam, as shown in Fig. 1, main and counter-gangways are driven to the right and left in this seam, the counter level being above the main gangway, as indicated in plan and cross-section in Fig. 2. These levels are driven close to the roof of the seam.

Fig. 1



Loading chutes are then driven from the gangway on a suitable inclination that will permit the coal to slide readily and give easy loading. These chutes are driven across the slate parting and into the lower 4-ft. seam. The manways are often driven separate from the chutes and half-way between them, and turned to the right or left to meet the manway carried up the side of the breast. The loading chute is widened out in the lower 4-ft. coal to form a breast 20 ft. wide. The chutes being driven on 45-ft. centers gives a 25-ft. pillar separating the breasts in the lower seam.

The two seams are now connected by driving level crosscuts through the parting. The breasts in the upper seam are driven 15 ft. wide with 30-ft. pillars between them, the center of each breast being over that in the breast beneath. The coal in the upper seam is taken out through these crosscuts, except what is left in the breast for the miners to stand on while working at the face.

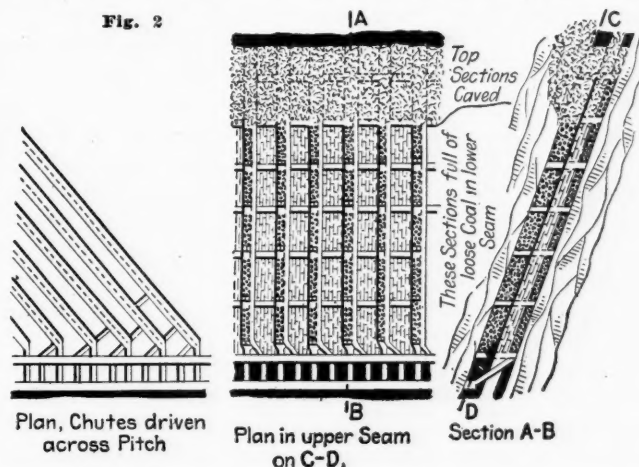
In this manner the breasts are driven up in sections as indicated in the cross-section shown in Fig. 2, until another counter-level is driven, thereby forming a series of panels or lifts.

When the breasts have reached their limit the work of extracting the pillars in that lift is commenced. Up to this point, the work is the same in both cases. In Case 1, however, owing to the frail nature of the slate parting, it is necessary to take out the top block of pillar in the lower seam first. For this purpose, a battery or bulkhead is built on the rise side of the last crosscut and the pillar worked to the rise of this battery, which supports the loose coal in the same manner as when driving up the breast, the surplus coal being drawn through the battery, as required for the proper support of the miners.

When this block in the lower seam has been worked out, the top block in the upper seam is taken out in the same manner, and when that is finished, the coal is drawn from the upper seam first, and then from the lower seam, until the rock and slate of the parting (which will probably cave as the coal is withdrawn) appears at the battery. The latter is then closed so as to hold the slate in the chute.

Case 2—As previously stated, the extraction here follows the same plan as in Case 1, until the pillar work

Fig. 2



is started. Because the parting is firm in this case, it is possible to take out the block of pillar in the upper seam first. When this has been done, wooden cogs and short props are placed so as to support the hard slate of the parting and prevent this slipping while taking out the corresponding block in the lower seam. In this manner I believe most of the pillar coal can be removed economically and without danger to the men.

The work of extracting the pillars thus proceeds in sections downward. It is, of course, possible that there may be conditions that would require a modification of this system; but, in general, it can be made to give a fair percentage of extraction. The construction of the chutes, manways and other details have been omitted in this description as being of minor importance and depending much on local conditions.

M. CRANSTON,  
Jasper Park Collieries.

Pocahontas, Alta., Canada.

### Thickness of Shaft Lining

*Letter No. 1*—Referring to the inquiry of G. L. Cox, *Coal Age*, May 5, p. 804, asking for a formula for calculating the thickness of shaft lining, I thought it would be of interest, in addition to the excellent reply given to this inquiry, to draw attention to the formula suggested by William Galloway, for calculating the thickness of shaft tubing. This formula, of course, applies only to circular shafts, the tubing being constructed of any material such as cast iron, brick or concrete.

Mr. Galloway gives the following formula for this purpose:

$$t = \frac{whd}{2(c + wh)}$$

in which  $t$  = thickness of lining, in inches;  $w$  = weight of cubic inch of water, in pounds (0.0361);  $h$  = head of water, in inches;  $d$  = internal diameter of shaft, in inches;  $c$  = one-third of the crushing strength of the material. This formula assumes that the pressure on the shaft lining, at any point, is equal to that due to the head of water at that point, as determined by the vertical distance of such point below the water level in the overlying strata.

Expressing both the head of water ( $h$ ) and the diameter of the shaft ( $d$ ) in feet, and calling  $c$  the ultimate compressive strength of concrete and combining the factor of safety here assumed as one-third of the ultimate strength, with the other numerical factors, this formula can be simplified and written as follows:

$$t = \frac{7.8hd}{c + 1.3h}$$

While the compressive strength of the material forming the lining of a shaft should always be determined by experiment, it can be stated that the ultimate compressive strength of concrete may vary from 1000 to 2000 lb. per sq. in.; and, for the purpose of estimate, it can be assumed that a good 1:2:5 concrete, one month old, will have a compressive strength of 1500 lb. per square inch.

#### APPLYING THE FORMULA IN PRACTICE

For sake of illustration, let it be required to find the thickness of concrete tubing for a shaft 12 ft. in diameter at a depth of 600 ft. below water level, taking the ultimate crushing strength of the concrete as 1500 lb. per sq. in. Substituting the given values in the last formula cited, we find for the thickness of tubing in this case

$$t = \frac{7.8 \times 600 \times 12}{1500 + (1.3 \times 600)} = \text{say } 24 \text{ in.}$$

The selection and mixing of the materials, in order to form a good concrete, are important. The sand should be clean, sharp and free from dirt or other foreign matter. If it contains mud or dirt, the sand should be washed. The mixing of the materials can be done either by hand or by machine, but the latter is to be preferred as it gives more uniform results.

When the material is mixed by hand this should be done before any water is added and after mixing care should be taken to add only sufficient water to form a stiff paste or mortar. The broken stone should be thoroughly soaked before being added to the mortar. The whole mass is then thoroughly turned over and stirred to complete the mixing, when the stones should be thoroughly coated with the mortar and evenly distributed in the mass.

Concrete must not be allowed to stand after mixing but must be placed at once in the forms before it takes the initial set. It should then be thoroughly rammed by wooden or iron rammers as soon as it is placed in the forms. My practice has been to use the following proportions in making concrete for engine foundations, mine openings, tunnel and shaft linings:

Natural cement, 1 vol.; sand, 2 vol.; stone, 4 vol.

Portland cement, 1 vol.; sand, 3 vol.; stone, 6 vol.

I have used a 2-in. mesh in sizing the broken stones, although there is no objection to the use of a somewhat smaller size.

C. McMANIMAN.

Rawdon, Quebec, Canada.

## Back to the Mines

*Letter No. 4*—I presume that the letters written on this subject were intended to apply more particularly to that class of miners who wander from place to place in search of more promising and remunerative fields, lured by the desire for travel, the attractions of city life, or other vague and undefinable longings. These letters have been very interesting and go far toward determining and remedying the causes of restlessness among this class of miners.

One of the biggest assets of contentment, in mining camps, is the home life, which it is every miner's privilege to enjoy. Home is usually what the man and his family make it, and is most enjoyed by those who work the hardest to make their homes comfortable and the surroundings attractive. Means to this end lie mostly with the tenant, who rents but does not own the house in which he lives.

Through a shortsighted policy the average tenant is prone to care only for himself. He has no thought of remaining where he is for any length of time, but is ready to pick up his few belongings and go whenever the whistle of the bluebird announces the coming of spring. The great host of tenants are quite ready to blame others for the mean surroundings and the bare and unattractive appearance of their homes.

It is true that, in many cases, company houses are built largely of the same pattern and often painted the same color. But, these houses can be made to look vastly different where the tenants manifest their individual tastes in the care of their lawns and by otherwise decorating the outside of their dwellings. At little cost, it is possible to increase the attractiveness of the home where the pride and care of the homelovers are properly manifested.

#### ANIMATED BY THE LOVE OF HOME

The sustaining principle of the homelover is the adornment and beautifying of the home, outside and within. The planting of one or more trees, cultivation of herbs and flowers, maintaining a pretty lawn and clean well-trimmed walks, all go to form a big asset, both for the tenant and the owner of the property. Under these surroundings a tenant is reluctant to leave a mining camp, even when work drags for a season. He knows that if he vacates his attractive home, applicants will not be wanting to take his place there.

The cause for restlessness in all callings of life is a deep-rooted one and has its origin in the selfishness of human nature, which refuses to "work for the other fellow." The Golden Rule is ignored in its application to self, and the inevitable result is a morbid condition of the mind that is quickly manifest in the man's life and surroundings. The remedy for the spread of this condition in a mining camp is a "City-Beautiful" campaign.

There are always men and women to be found who need no urging to make their own surroundings attractive and help others to do the same, and these can always be depended on to take the lead and start such a campaign for



the improvement of the meanest mining camp. Their own homes are an object lesson to others and an example that, with a little help and encouragement, will be followed by one and another, until the improvement has spread throughout the camp and become the pride of every dweller therein.

While the owner of the property is benefited to an extent by the interest taken by his tenant in the upkeep and adornment of the home, it is the tenant himself who receives the greater benefit through the improvement of his surroundings, by reason of the effect it has on his own life and the lives of his family. For this reason, the burden of home adornment must rest chiefly on the tenant. Should this work be done by the owner, in nine cases out of ten it would be ill-appreciated by the tenant, who would come to regard it as a part of his rights for which he pays.

To secure the owner against loss owing to lack of care on the part of an inappreciative tenant, it would be necessary then to increase rents generally, and the burden would fall most heavily on the homelover who prefers to make his own improvements in the adornment of his home. These individual improvements would also show a variety of tastes, which is so essential in the beautifying of the camp.

The starting of a "City-Beautiful" campaign requires an animated interest being taken by the leaders who can best appreciate the advantages to be gained. Such a campaign will bring the boys "back to the mine," or rather keep them there.

W. H. NOONE.

Thomas, W. Va.

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## Mine-Safety Inspector

*Letter No. 6*—I have been much interested in the various letters relating to the inspection of mines, although the views expressed by some of the writers do not coincide with my own. An experience of several years in the supervision of mines has convinced me that many of the fatal and nonfatal accidents that occur underground can be avoided by a proper inspection of the roadways and workings.

Any operator or superintendent who will stop to consider the matter for a moment will agree that it does not pay, in a monetary sense, to injure or kill men. In the first place, good men are scarce and the temporary absence from duty, by reason of injury, of a single man will generally cost the company more than the expense of closer supervision that would have avoided the accident.

For instance, a motorman has his foot crushed or is otherwise slightly injured, because his locomotive was derailed at a bad place in the road that should have been put in repair some time previous. He is sent home and another man less familiar with the road is put in his place. As a consequence, the locomotive does not make the same number of trips or pull the same number of cars in each trip, and the day's output is reduced, perhaps 100 tons. As the overhead charges are the same, this reduction in the output of coal is a serious matter. The same is true in respect to an expert cager, topman, hoisting engineer or fireman who is away from his post for a single day. Each one of these men is an important link in the chain of coal production.

Again, it is important to remember that the assessments for the Workmen's Compensation Fund are in

direct proportion to the accident list. To kill a man costs a company of any size at least a couple of thousand dollars and often more. Also, the minor nonfatal accidents help to increase the rate of assessments that the operation must pay to the compensation fund, to say nothing of the loss of time and reduction in output.

### FOREMEN'S DUTIES PREVENT THEIR GIVING SUFFICIENT ATTENTION TO SAFETY

It has been suggested by one writer that to increase the number of assistant foremen would decrease the accident list, believing an almost constant supervision necessary in order to attain the desired end. In my opinion, this is not the remedy to apply. Observation and long experience convince me that both mine foremen and assistant foremen are taxed to the utmost in maintaining the daily production of coal. To such a degree are these men held accountable by their superintendents for maintaining the output, that they have little time to think of human safety, which is the most essential consideration for the benefit of the men, as well as for the financial success of the operation, if superintendents and managers could only see it in that light.

Permit me to say that, in my opinion, it would be much wiser to employ one man whose sole business it would be to inspect the mine for safety, observe the habits and practices of the workmen, and give them the instruction that they need to make themselves safe. The duty of such a man would be to advise in regard to better methods of timbering at the working face and on the roadways in the mine.

A mine-safety inspector would be able to prevent many a large fall by seeing that places are made secure, and this will cost less than to clean up the falls that would otherwise occur, to say nothing of avoiding possible injuries or fatal accidents to men who might be caught by the fall. He would inspect systems of wiring, and, in fact, all classes of mine equipment, making his report regularly to the superintendent.

### SAFETY INSPECTOR'S SUGGESTIONS TO BE OBEYED

Mine foremen and assistant foremen should cooperate with the safety inspector, by carrying out his views in regard to what is necessary for the safety of the men, in the entire operation of the mine. In no sense should a safety inspector, however, pose as a wise superior to the mine foreman, but his views in regard to safety should be implicitly obeyed, until it is shown that such compliance has not reduced the accident list but rather increased the cost of production, in which case another inspector should be found who could show better results.

Let me suggest that a mine-safety inspector should not be a young man with limited experience, but should be one whose influence, knowledge and experience would command respect, which is essential in order to enable him to instruct the men successfully in the loading and handling of their coal. I recognize the fact that many foremen would object to the presence of such a man in the mine, regarding him as a kind of informer or spy on their work. This, however, is of little moment, as the main object to be considered is the safety of the men and the mine. It is well known that a mine where small accidents are continually occurring obtains a reputation that keeps men away from the place as long as work is to be had elsewhere.



There is no doubt that a mine-safety inspector would make enemies at first, but, if he is competent, he will be able, in three months' time, to show results that would be gratifying both to the mine officials and the men. The man who can produce the goods in this manner is not one who will work for a song, but he will save many times what he is paid. The suggestion that such inspection of a mine would annoy and hinder men in their work is hardly worth consideration, and I pass it without comment.

JOSEPH VIRGIN.

Moundsville, W. Va.

## Sharpening Coal Augers

*Letter No. 4*—In connection with the interesting discussion relating to the best method of sharpening coal augers, kindly permit me to draw attention to one point that is apt to be overlooked, because the majority of mine blacksmiths are obliged to use the common coal or coke forge that has many disadvantages in comparison with the recent low-pressure oil forge, designed especially for the treatment of drill steel.

With steel selling at the highest price in history, it has become imperative for mine operators to adopt every means for economizing its use. Having used the "Case, low-pressure oil forge" in the sharpening of drills at our mine, I can say that the saving of steel effected is well worth considering.

The Case forge is equipped with a small aluminum blower, direct-connected to a high-speed electric motor. This blower furnishes the air necessary to atomize the oil, at the low pressure of only 6 oz., which means a great saving in power over burners of other design requiring a far higher pressure.

### ADVANTAGES OF THE LOW-PRESSURE OIL FORGE

The chief advantages, however, in the use of this type of forge is the saving of steel, due to the following causes: First, in the use of a coal or coke forge, the fuel frequently contains some sulphur, which forms a scale of sulphide of iron on the surface of the steel, resulting in a considerable loss of the metal.

Second, owing to the complete combustion of the oxygen of the air blown into the forge, which is secured through the proper regulation of the oil supply by a specially designed air valve, there is no oxidation of the iron by contact with air and an entire absence of scales of oxide of iron so common in the use of any type of open forge.

Besides these advantages in the saving of steel, the work of heating is continually under observation, which practically avoids the possibility of burning the iron, as often happens in a coal or coke forge where the iron is covered by the fuel and must be withdrawn to observe its heat. It is also noticed that drills sharpened in an oil forge hold their edge longer than those heated in coal or coke forges. The approved low-pressure oil forge has practically eliminated the noise and smoke, which formed an objection in earlier types.

The loss of steel from sulphurization and oxidation of the iron, in the use of coal or coke as fuel, has seldom been considered; but the cost-sheet, at mines where much steel is used, makes this loss apparent when oil is used for fuel instead of coal and coke. There is a saving, also, in the

time required for heating the steel. The oil forge has a capacity of twelve hundred 1½-in. drills per shift of 8 hours. The forge is made ready for the first heat in 10 min., and when the work is finished, the consumption of fuel ceases immediately. I thought these facts would be well worth mentioning in this connection.

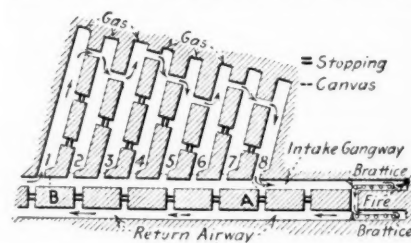
—, Colo.

MINE SUPERINTENDENT.

## Extinguishing Fire in a Gassy Mine

*Letter No. 1*—Referring to the inquiry, in regard to extinguishing a fire at the face of a heading in a gassy mine, asked by "Fireboss," *Coal Age*, June 9, p. 1012, permit me to offer the following:

In the accompanying figure, which appeared in this inquiry, I will assume that the face of the heading is 100 ft. in by from the last crosscut. As shown by the



arrows, the rooms are ventilated by the air current before it reaches the seat of the fire, which is located at the very face of the heading. It is further stated that

"the brattice is expected to take fire any moment, at a distance of 10 yd. back from the face," and the first step that should be taken is to remove one or more sections of this brattice to prevent its catching fire.

Having removed a part of the brattice, reduce the quantity of air passing around that end, by short-circuiting a portion of the current, allowing it to pass through a hole in the brattice at the crosscut. This will permit sufficient air to flow around the brattice to make it possible to ascertain whether the fire can be extinguished by any direct available method such as fire extinguishers or water. The arrangement will also prevent any accumulation of gas in the heading in proximity to the fire, by keeping the place sufficiently ventilated.

Assuming that the fire is of such magnitude that it cannot be extinguished by any available direct method, but will require to be sealed off and smothered, it will be necessary before doing this to increase the quantity of air circulating at the face of the rooms, so as to minimize the danger of an explosive mixture being formed by the gas issuing from the faces of these rooms.

The next step would be to remove a part of the stopping next outby from the one through which the air is traveling. This is done as a safeguard against the danger that would arise in case the fire increased and drove the men back from the last crosscut. The opening made in the second crosscut back from the fire will act as a regulator to short-circuit a portion of the air passing up the heading.

Everything is now in readiness to build the stopping to isolate the fire, provided the necessary material for that purpose is at hand. The work should be done as quickly as possible and should be in charge of a competent person. Good practical miners must be employed to do the work. A wooden stopping is first built, after selecting a good place as near as practicable to the seat of the fire. Immediately outside of the wooden stopping another stop-

ping of slate, or brick laid in mortar, or concrete should be built. It is important to build into the stopping a vent pipe, which can be closed by a plug or valve. The purpose of the vent pipe is to enable the air to be tested from time to time to ascertain its condition and enable one to judge of the progress made in the extinction of the fire.

FIREBOSS.

Punxsutawney, Penn.

❧

## Practices in Blasting Coal

*Letter No. 4*—After carefully reading the article by A. F. Dickson entitled "Safety in Shooting Coal," *Coal Age*, June 9, p. 984, I fail to understand the method he suggests. The subject is one worthy of careful consideration, as many accidents occur from improper methods of shooting coal. Such practices have frequently, no doubt, been the cause of mine explosions, especially in faulted territory. While any suggestions tending to reduce the number of accidents in blasting coal and the handling of explosives in mines are appreciated by readers, writers should be careful to make their meaning clear.

In the article to which I have referred, Mr. Dickson cites a case where coal is mined in an "ordinary room," under a drawslate that has a tendency to fall when the shot is fired. He suggests that, in such a case, it is safer to fire three shots instead of two, which he says is the prevailing method of shooting machine-mined coal. He explains, further, that the first shot should be located near the center of the cut at a slight angle that will enable the powder to perform its work, and adds that this will give the two remaining shots a chance to break down the coal by the use of little powder.

The "prevailing method of shooting machine-mined coal" is described as the firing of a rib shot, which is located from 6 to 18 in. from one rib, while the remainder of the coal is shot down by the second hole. This is a very vague description, to say the least, as the width of the room or the thickness of the coal is not mentioned.

### CONDITIONS MUST DETERMINE METHODS IN BLASTING

In some districts, rooms are driven 14 ft. wide, while in other districts the width varies from 20 to 30 ft., these measurements being regarded as "ordinary" width of rooms in their respective districts. In some cases, five shots will be required to shoot the coal at the face of the room, because of its greater width. The number of shots to be fired to break down the coal in a single cut across a room will depend largely on the hardness and shooting qualities of the coal, as well as the nature of the roof.

A danger often experienced in the mining of thick seams of coal is the "side hangers." These are more apt to occur in some formations than in others and require the exercise of special care to avoid them, as they are dangerous, especially where they occur on roads laid along the ribs where men must travel to and fro, in reaching and leaving their working places.

In all mines, the methods of blasting employed should be adapted to suit the particular conditions existing in that district, in respect to the nature of the coal, thickness and inclination of the seam and the character of the roof and floor.

In the bituminous districts of Pennsylvania, coal seams are being worked that vary from 2.5 ft. to 9 ft. in thickness, and the Bituminous Mine Law provides that the

mine foreman and the assistants working under his instructions shall supervise the work and regulate the drilling, charging and firing of all holes. It is their duty under this law to see that all holes are properly placed and instruct the men how much powder must be used in each hole, gaging the amount according to the conditions. This appeals to me as the safest practice to adopt.

Punxsutawney, Penn.

MINER.

❧

## The Negro, South and North

*Letter No. 2*—Having had quite an experience in the handling of colored men, in various states South and North, while acting as mine foreman in the operation of mines, and in driving tunnels and in other construction work, I was naturally much interested in the letter by "Northerner," *Coal Age*, May 26, p. 925, in which he shows the difference in the treatment the negro receives in the South and in the North.

In my time, I have learned to appreciate both the good and the bad qualities of the negro. One thing that colored people of the more intelligent class appreciate is the fact that there are no "Jim Crow" passenger cars in the North. The colored man is pleased, also, that he can share a seat in the street car with a white man, without being insulted or made to feel that he is inferior to the one who sits beside him.

It is gratifying to observe that, for the most part, the word "nigger" is not used in the North. The term "colored man" is more generally used in referring to one of that race. Personally, I detest the word "nigger," which might well have been abolished with slavery, years ago.

### CHARACTERISTIC OF THE COLORED MINER

In my varied experience I have had to deal with some first-class machine-runners who were colored men, and who understood their work and could be depended on to do what they were told. It is true that I have found a few of a different class, but the majority of these belong to that drifting element in mining who have been well styled "floaters." As soon as these have made a little stake they are up and away.

An instance of this occurred when I was foreman of a certain tunnel. I had a colored man running a machine who had proved himself a good, efficient worker. After a few weeks, however, I noticed he was getting a little slack in his work. Machine-runners being rather scarce at the time, I overlooked his carelessness, until things became so bad that I was forced to tell him that if he did not make a change soon, I would put another man in his place. That evening I was not much surprised to find things even worse than before and told him to go to the office for his time, which he was not reluctant to do. A little later I saw him hanging around and he came to me and thanked me for his dismissal, stating that it was what he wanted.

I can indorse what "Northerner" has said about many of the colored people owning their own homes in the North, as I have the addresses of many such with me, who have proved themselves good workers in time past. I will say in closing, however, that where a foreman has many of this class of men working for him he must be sure to enforce discipline, or they will soon take advantage of his leniency and become difficult to control.

Carbondale, Penn.

CYMRO.

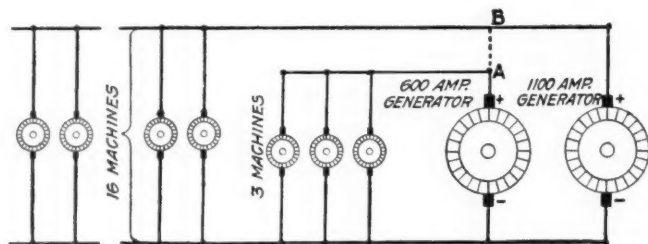


## Inquiries of General Interest

### Electric Power Distribution

At our mine we have two generators, in the power plant, supplying power to 16 machines and three machines, respectively. Each generator is connected through its positive pole with a separate wire conveying the power to the machines. All the machines, however, use a common return wire, as indicated in my sketch.

One of these generators is supplying a current of 1100 amperes to 16 machines, while the other supplies a current of 600 amperes to three machines. The fact that



these machines all use a common return wire connected to the negative poles of both generators has caused considerable discussion, hereabouts, as to whether this is the best arrangement, it being claimed that the single return wire is a handicap and does not permit the proper distribution of the power. Will *Coal Age* or its readers kindly suggest how the arrangement can be improved.

Eldorado, Ill.

MINE ELECTRICIAN.

The arrangement described by this correspondent affords a very unequal distribution of the power of the two generators. It could be much improved by connecting the two power lines as indicated by the dotted line *AB*, in the figure, so that they would operate in parallel and the power furnished by both generators flow through the two lines, as required by the number of machines in operation on each line. There is no harm in the machines using a common return wire, provided that wire is large enough to carry the current. The real trouble lies in the lack of distribution of power in the two positive wires, which should be avoided by connecting the two at the power house so that they will operate in parallel, as previously suggested.

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### Overcasts vs. Undercasts in Mine Ventilation

Will you kindly explain, in the columns of *Coal Age*, what is the purpose of an overcast or undercast, in the ventilation of a mine, and how they differ. Which is the better form to employ?

STUDENT.

Pittsburgh, Penn.

The purpose of either an overcast or undercast is to conduct one air current over or under another. An overcast is excavated in the roof of a haulage road or head-

ing, while an undercast is excavated in the floor. This avoids the necessity for a door in the entry, which would be necessary in any other arrangement.

An overcast is always preferable to an undercast, for the reason that the latter may become filled with water or blackdamp and be rendered impassable when most needed. Water collecting in an undercast must be continually bailed out or it will reduce the sectional area and shut off the air current from circulating in that district.

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### Proposed Mine Siphon

I want a little information in regard to a siphon that it is proposed to put in operation in our mine. The distance from the sump or intake end of the pipe to the discharge end is 500 ft. The point of discharge is 8 ft. below the level of the water in the sump that the siphon is to drain and the highest point in the pipe line will be about 12 ft. above that level. It is intended to use  $\frac{1}{2}$ -in. pipe.

The pipe line will be provided with a valve at the highest point, for the purpose of filling it with water and drawing off any air that may accumulate in the pipe. In order to start the siphon, both ends of the pipe will be plugged before filling it with water, which must be poured in through the valve at the high point. When the pipe is full this valve will be closed and the plugs at the two ends of the pipe drawn at the same time. I would like to ask if this siphon will work and how much water it will discharge while draining the basin.

Girard, Kan.

MINE FOREMAN.

The use of  $\frac{1}{2}$ -in. pipe, for this length of siphon, cannot be recommended in mining practice. The rise and fall given for this pipe line is sufficient to allow it to work provided the pipe is clear of obstruction. Mine waters are generally acid, and the chances are that so small a pipe as this will be quickly corroded and clogged so badly that no water will be discharged and the siphon fail to operate.

Assuming that the pipe is clear, however, the quantity of water that this siphon may be expected to discharge can be calculated by the formula

$$G = d^3 \sqrt{\frac{800hd}{l}}$$

In this case, the effective head is  $h = 8$  ft., which is the vertical height of the level of the water in the upper basin above the point of discharge; the diameter of the pipe is  $d = 0.5$  in., and its length,  $l = 500$  ft. Substituting these values in the given formula, we have

$$G = 0.5^3 \sqrt{\frac{800 \times 8 \times 0.5}{500}} = 0.63 \text{ gal. per min.}$$

This flow is practically  $\frac{5}{8}$  of a gallon a minute or 5 gal. in 8 min. when the pipe is clear.



## Examination Questions

### Pennsylvania Bituminous Firebosses' Examination, April 13, 1917

(Selected Questions)

*Ques.*—If, upon making an examination of a mine you discovered explosive gas in the intake air current of one of the splits in which 45 persons are employed, explain your method of procedure to protect the workmen.

*Ans.*—Assuming that the men are at work in their places when gas is discovered in the intake, there should be no delay in notifying the men to extinguish their lamps and withdraw at once from that section of the mine. The fireboss making the discovery should assume charge and direct the men how to withdraw by the shortest and safest route. After all the men have left the section, the fireboss should select competent men to assist him. If practicable, the air current charged with gas should be short-circuited temporarily so as to carry the gas directly into the main return airway, until the source of the trouble can be ascertained.

Unless the gas can be prevented from entering the intake of this split it will be necessary to increase the amount of air in circulation so as to dilute the gas below the danger point. In the performance of this work, the first step to be taken is to protect all the entrances to the district and prevent any but authorized persons from coming in contact with the gas.

When the condition is under control, each working place in the district must be carefully examined before the men are again permitted to enter for work. It will then be the duty of the fireboss to enter a report of what has occurred in the book kept for that purpose.

*Ques.*—What instructions should be given to the workmen in regard to the use and care of safety lamps?

*Ans.*—Every workman intrusted with the use of a safety lamp, in a mine generating gas, should be first thoroughly trained in that regard. He should be made to understand that a safety lamp is very unsafe when improperly handled. He should be taught to take the lamp apart and assemble it again, so that he will be thoroughly acquainted with its construction. He must be instructed to hold the lamp in an upright position at all times, so as to prevent the contact of the flames with the gauze or glass forming the chimney. He must be taught the danger of swinging the lamp or carrying it unprotected against a strong air current; or exposing it too long to gas; or permitting the gauze to be injured or become dirty or covered with oil or dust.

Every man using a safety lamp must be shown how to detect gas on the flame of the lamp and be instructed how to proceed when he finds gas is present and taught what to do should his lamp fill with flame. He must be told to always put his lamp in a safe place where it will not be liable to be injured by falling slate or be struck by a pick or fall from its place. Each man must examine his own lamp when taking it from the lamp-room and must understand that he is responsible for its

return in good condition. He must be warned not to tamper with the lamp or permit its use by anyone.

*Ques.*—How would you render first-aid (a) to a person suffering from electric shock; (b) to one suffering from powder burns?

*Ans.*—(a) Send for a doctor at once. Do not delay but lay the person on his stomach with arms stretched out straight above his head, or the head may rest on one arm bent at the elbow, the face being turned to one side to allow free access of air to mouth and nostrils. Kneeling at one side or astride of the body, place the palms of the hands on the short ribs across the small of the back, the thumbs nearly touching each other. Then throw your weight forward so as to depress the chest of the patient and expel the air from his lungs. Again, remove the pressure so that the expansion of the lungs will cause an inhalation of air. Repeat this forward and backward movement at the rate of twelve or fourteen times a minute and continue until the patient gasps or shows signs of resuscitation. Efforts should not be abandoned in less than one hour and a half. Ammonia on a sponge or handkerchief held near the nose will often help revive the victim. When breathing has been restored, the patient should be covered with dry warm blankets and given plenty of air. The limbs should be then rubbed toward the heart to restore good circulation.

(b) While waiting for the doctor to arrive powder burns should be treated by cutting loose the clothing and applying some oil or dressing to exclude the air. An emulsion of boiled oil and lime water is good for this purpose, or a paste of baking soda, starch or flour in water. Applications of vaselin, olive oil, fresh lard or cream are all good.

*Ques.*—(a) After making your examination of a mine, what evidence would there be to show that you had examined all working places? (b) When and where would you make your reports, and what information would the reports give?

*Ans.*—(a) The bituminous mine law of Pennsylvania (Art. 5, Sec. 1) reads in part as follows: "The fireboss shall examine for all dangers in all portions of the mine under his charge and, after each examination, he shall leave at the face and side of every place examined, the date of the examination, as evidence that he has performed his duty." The date of the examination marked by the fireboss on the face and ribs of each working place, in compliance with this law, is evidence that he has been there that morning, and, assuming that the fireboss is conscientious in the performance of his duty, this mark is sufficient evidence that he has examined the place.

(b) Upon completing his examination, the fireboss should record the same in the book kept for that purpose at the bottom of the shaft or in the office, as the case may be. The record must show that all the working places in the mine have been properly examined, and state where and what dangers have been found.

# Coal and Coke News

## Washington, D. C.

By ironing out all of the differences which have existed between it and the representatives of labor, the committee on coal production feels that one of the most important accomplishments, since its organization, has been achieved. At the call of the Secretary of Labor, representatives of the United Mine Workers of America, the American Federation of Labor and the Council of National Defense met F. S. Peabody, the chairman of the committee on coal production, in the office of Secretary Wilson. The session was an executive one and no information as to the details of the meeting is being given out.

The important development, however, is that the following representatives of labor have been made members of the committee on coal production: John P. White, president of the United Mine Workers of America; Frank Hays, vice president of the United Mine Workers of America; William Green, secretary of the United Mine Workers of America; John L. Lewis, statistician of the United Mine Workers of America; James Lord, president of the mining department of the American Federation of Labor; John Mitchell, chairman of the Industrial Commission of the State of New York, and H. L. Kerwin, secretary to the Secretary of Labor.

With his committee complete at last, Mr. Peabody has called a meeting for 10 a. m. Thursday, at the offices of the committee in the new building of the Department of the Interior. This meeting will be the most important yet held by the committee, it is anticipated.

Such differences of opinion arose at the meeting Thursday, called by the Federal Trade Commission to discuss the resizing of anthracite coal, that Governor John F. Fort, who presided, appointed a committee, which will attempt to adjust these differences. Francis S. Peabody was named as the chairman of the committee. The other members are W. J. Richards, Philadelphia & Reading Coal and Iron Co.; Capt. W. A. May, Pennsylvania Coal Co. and Percy C. Madeira, Madeira, Hill & Co. In addition, the Bureau of Mines and the Federal Trade Commission each will appoint a member to serve on the committee. It is expected that the committee will meet this week and the hope is expressed that an agreement will be reached on the principal points of difference.

Some of those attending Thursday's meeting with Governor Fort took the stand that the sizes of anthracite have been arrived at after many years of practical experience. They fear unfavorable results if any effort is made to combine sizes. Their claim was that the operators and the railroads would benefit at the expense of the domestic consumers.

Those in favor of reducing the number of sizes had as their principal argument the fact that more expeditious dispatch of cars, as well as economy in the use of cars, would result and that the storage problem would be simplified.

During the past week, the Navy Department has been allotting its requirement for the next three months, which will be nearly 500,000 tons, among the operators of the smokeless fields of West Virginia, Maryland and Pennsylvania. This allotment is being made on a basis of \$2.33. The operators have reached an agreement with the Secretary of the Navy whereby this price will be paid pending an investigation by the Federal Trade Commission. When the trade commission reaches a decision as to the cost of the coal to the operators, an adjustment will be made on that basis plus such a profit as the Federal Trade Commission may deem reasonable.

No coal miners should be removed from the mines of the United States to work in French mines until a careful study of the consequences of such action has been made. This is the opinion of Governor John F. Fort, of the Federal Trade Commission.

Governor Fort is in charge of the coal

investigation being made by the Federal Trade Commission and is in close touch with the labor situation. It is his conviction that immediate steps should be taken to keep coal miners out of the army. He points out that the mines are losing men every day through voluntary enlistments in the regular army and in the National Guard. Means must be found, he says, to bring it vividly to the attention of the public and to the miner himself that he is no whit less patriotic by continuing at his post doing his best to increase coal production than is his fellow citizen who risks his life in the trenches.

Salient features of the brief of the Pittsburgh Coal Operators' Association in opposition to the Interstate Commerce Commission's tentative report on Lake cargo coal rates are as follows:

"We suggest that the shippers of Lake cargo coal are entitled to some participation in the results of the greatly improved conditions of operation on the Norfolk & Western, because those shippers have helped in every way to make those results possible. Instead, it is proposed that those shippers should pay relatively six cents per ton more.

We submit that the Commission should reopen the Lake cargo proceedings and require the production of the witnesses for whom we asked, or exclude from all consideration in the case the exhibits involved.

The bearing of the conclusion as to Ohio River bridges is excepted to in that the effect of the finding is to increase the West Virginia differential as against the Pittsburgh district as well as against the Ohio district."

Among the exceptions noted by the Central West Virginia Coal Operators' Association to the tentative report of the Commission on bituminous to central freight association territory are the following:

The tentative report accepts as convincing tests made by the carriers based upon a limited number of destination points, but assigns as one of the reasons for disregarding tests made by the operators, the fact that they are based on a limited number of shipping points.

The report should have found that the shipment of high volatile coals from southern West Virginia east to Tidewater is negligible.

The tentative report assumes that from 3,500,000 to 5,500,000 tons of bituminous coal used in Chicago annually come from Kentucky and West Virginia (exclusive of New River and Pocahontas), whereas the evidence shows in exact figures that this tonnage is considerably less than the figures thus assumed.

Speaking generally of the proposed advances in bituminous coal rates to Central Freight Association territory, operators in the Pocahontas, Tug River and Thacker districts, in their brief, say:

"Admitting for the sake of argument that the carriers may lawfully make a joint showing, we desire to call the attention of the Commission to the seriousness of breaking up and destroying a rate relationship of 14 years' standing under which great business enterprises have been built up and under which great tonnages move, and of establishing a new differential upon the evidence of one man. The gravity of the situation is enhanced when, as is true in this case, the evidence of that witness is not confined to facts within his own knowledge."

A bill to regulate the production, sale and distribution of coal has been introduced by Senator Pomerene, of Ohio. The bill gives the President the authority to fix the prices of this commodity "whether sold by the coal-mine operator or the dealer in coal" and to have general supervision over its distribution and storage. The bill provides that the President may delegate this power to the Federal Trade Commission in case he does not exercise it directly.

In case of necessity, the President is empowered to take over coal mines and to operate them. In such a necessity, the bill provides for "a fair and reasonable compensation for the use" of the mine and its appurtenances. The bill also provides penalties for any who refuse to sell coal at the prices fixed or who may violate the regulations which may be prescribed for the enforcement of the law. The bill was referred to the Committee on Interstate Commerce.

## HARRISBURG, PENN.

Senator Sproul, one of the leaders in the Senate, has introduced a resolution providing for the appointment of a commission to investigate and report upon the subject of old-age pensions, and asks for \$5000 for the purpose of carrying out the work of the commission.

The resolution states that progressive legislation has been enacted in some states and nations establishing a system of pensions for aged and incapacitated citizens and a number of plans for accomplishing this result have been suggested at various times in Pennsylvania.

The Governor is directed to appoint a commission of seven citizens to serve without compensation and to make its report to the legislature not later than Mar. 15, 1919. The commission is to consist of two members of the bar of the Supreme Court of Pennsylvania, who have studied social problems, two employers of labor, two members of recognized labor organizations and one citizen of the Commonwealth who shall be a woman experienced in the study of social problems.

A measure to guard against extraordinary periods of unemployment by creating an emergency public works fund in the state, sponsored by Senator Sproul, has been reported out of the committee on finance in the Senate.

The bill embodies the idea that at a time of temporary industrial depression the commonwealth may jump into the breach by providing employment for thousands of men in public works. The bill would create an emergency public works fund, to be administered by the Governor, auditor general, and state treasurer.

Senator Catlin, of Luzerne County, has introduced a bill that will make it lawful for any incorporated or unincorporated churches, cemetery companies or burial associations now prevented by charter restrictions or otherwise from leasing or selling any coal owned by them and underlying their properties to sell or lease the coal to such extent as will insure the support of the overlying surface and subject also to the requirements that at least 50 per cent. of said coal shall be left in place properly distributed to support the surface and that no mining is to be done or permitted closer to the surface than 200 feet.

The funds raised by such lease or sale are to be used and applied only for the purchase and acquisition of additional land for the purpose and use of the churches, etc., or for the improvement, care, beautifying, etc., of their properties.

House bill No. 1827, which will prohibit the excavating, dredging, etc., of material from the bed of any navigable stream without first obtaining a license from the state and imposing a tax upon the material taken from the streams, has been amended so that the act shall not apply to the "excavating, dredging and carrying away of any material which has or may cave into the bed of such navigable stream has been washed or removed from any mine or mining operation and coal shall be considered such material."

Plans have been made to change the law relative to the State Insurance Fund so that it can use some of the revenue received by it for administrative purposes. It will be given \$65,000 expenses until next January and after that must paddle its own canoe. Under terms of a decision given to the State Treasurer a few days ago by the Attorney General's department the appropriation made two years ago will be available until used and will not lapse.

Twenty-two representatives from the anthracite counties met on June 12, and organized themselves into a committee to force the Scarlet mine cave bill out of the Senate Mines and Mining Committee after the House takes favorable action upon it.

Members of the committee were of the opinion that the Governor ought to be reminded of his promise to solve the problem of surface subsidence and that at the opening of the session the chief executive had promised to do everything in his power



to assist in the passage of legislation to meet the conditions he described in his message on Jan. 2.

The Scarlet bill is a difficult measure to pass for the reason that it affects the bituminous districts, and if it did not affect the soft-coal fields it could not be constitutional. In the soft-coal regions it is argued that all mining land is sold with full mining rights. In that region the mines are operated mostly under farm lands and the surface is worth very much less than the mineral right. Senator W. E. Crow, who is himself a bituminous operator, declared that it would be unfair to mine operators or owners of mineral rights to make them answerable to the surface owner, whose property may have been acquired many years after the mineral estate began to be developed.

The Woodward measure imposing a 2 per cent. tax on coal as prepared for market, and the Dawson bill dedicating one-half of this tax to the producing communities, are still in the finance committee, and neither one of these will be reported out according to the present program.

The coal-tax bill is objected to by the bituminous operators, particularly as a direct tax upon production, and the Dawson bill is unnecessary without the other, while the Ramsey mine-cave bill is useless unless the tax on coal is passed. Senate leaders claim that the resources of the state should not be subjected to a direct tax at this time, when it is necessary to produce to the full capacity.

Governor Brumbaugh, on June 14, appointed the following named persons to be inspectors of bituminous coal mines of Pennsylvania for the terms of four years: Richard A. Malze, Uniontown; Thomas H. Thompson, Punxsutawney; Thomas A. Mather, Tyrone; James J. Stoker, Irwin; Charles H. Crocker, Johnstown; Thomas A. Furniss, Punxsutawney; P. H. Callaghan, Bridgeville; John J. McDonald, Greensburg; William Langan, Elizabeth; Harry Phythyon, Belle Vernon; Edward E. Girod, Masontown; Patrick S. King, Pittsburgh; and C. P. Byrne, Charleroi.

#### PENNSYLVANIA

##### Anthracite

**Kaska**—It was announced on June 15 that the Kaska William colliery will be reopened as soon as necessary repairs can be made. This colliery was closed several years ago and the workings allowed to fill with water. Ten carloads of timber for repairs are on the ground, and arrangements are being made to pump out the water. Valuable coal deposits are located at this colliery, and when in operation 1000 men and boys will be employed, insuring a boom to this section, which suffered a blow when the work was suspended.

**Nanticoke**—The Susquehanna Coal Co. officials are deeply interested in the success of the garden plots which have been apportioned to mine employees and others. In compliance with a request of Vice President R. A. Quin, representatives of the Luzerne County Farm Bureau and officials of the Department of Agriculture of State College are visiting the plots and advising the amateur farmers as to the methods to be employed in securing good crops. There are over 1000 plots planted, each averaging one-eighth of an acre.

**Shamokin**—Entombed behind a rush of coal from 2:15 o'clock in the afternoon of June 12, until late in the morning of June 13, Joseph F. Shamus was rescued alive at the Susquehanna Coal Co.'s Hickory Ridge colliery. After firing a shot he started dressing off the coal when the pillar "ran away," closing him in. His plight was discovered by a fellow workman, who summoned assistance. The company and state officials took charge of the rescue work.

**Pittston**—Mine caves over workings of the Butler colliery of the Hillside Coal and Iron Co., in Pittston Township, have in recent weeks frequently affected the traffic of the Scranton Railway Co., the caves appearing under the tracks of the Moosic line on Railroad St.

**Minersville**—The coal companies have completed their award of increased wages to their bosses and clerks. The figures vary at each colliery, some have granted the 36c. per day to their monthly men both in office and mine, others have given a scale running from \$7.50 to \$15 per month, while another company made a straight increase of \$15 per month. Against this increase is the unwelcome announcement that the price of coal to employees will

go up with the regular scale increases, so that the cost of necessities will keep pace with the increase.

**Tamaqua**—The Philadelphia & Reading Coal and Iron Co., has placed a new washery in operation near Tamaqua, which will prepare the rich banks of the old Reevesdale workings lying between that town and Tuscarora.

**Shenandoah**—The Draper colliery has resumed full operation with an output of about 2000 tons of coal daily, after being shut down for some time for repairs. The plant employs about 1000 hands.

**Hudonsdale**—The town of Little Italy is being moved across the Nesquehoning Creek to the foot of Broad Mountain, more than a mile distant, by the Lehigh Coal and Navigation Co., owner of the land upon which it was built. This land contains rich deposits of anthracite that the company is preparing to mine. This action will open to the Lehigh Coal and Navigation Co. one of the richest deposits of anthracite in the world, and one which is covered with only a shallow layer of ground, and is only a short distance of the company's No. 14 breaker. Little Italy was laid out many years ago. It contained modern comfortable homes, besides schoolhouses, a church, a lodge hall and other public buildings.

**Hazleton**—The Evans Mining Co. is opening new workings in the Beaver Meadow district and has awarded a contract to the Wheeler & Riley Construction Co., Hazleton, for extensions in its plant.

##### Bituminous

**Washington**—A deal was closed on June 14, in which the Carnegie Coal Co., of Pittsburgh, purchased a block of almost 2500 acres in northern Washington County, paying \$875,000 for the block. The Pittsburgh Coal Co. also bought additional lands along the Chartiers Southern R.R. containing 900 acres in all for \$307,000. In addition to smaller tracts, included in the block secured by the Carnegie Coal Co., were holdings of the Chartiers Mining Co., Atlas Coal Co. and the J. H. Sanford Coal Co. All of this land is located in Smith and Cross Creek townships, where coal developments are being rushed. The 900 acres secured by the Pittsburgh Coal Co. is composed of tracts adjoining the block of 8000 acres it purchased along the Chartiers Southern R.R.

**Cresson**—What promises to be the greatest first-aid meet in the history of Cambria County is being planned for the first week in August in this borough. There has been a vast increase in first-aid work in this county within the last year, practically every corporation not represented a year ago having joined in the movement.

**Indiana**—The coal activities in this section have taken another boom in the past month, especially in the Yellow Creek district, about four miles from Indiana. The William Findley farm, owned by H. A. Snyder, has been sold for \$25,000 to A. E. McEvoy, representing the Rose Coal Co., of Toronto, Canada. The purchase includes 142 acres of surface and coal. The Ferrier Run Coal Co., of Ebensburg, has leased about 1000 acres of coal land from the Indiana Land and Improvement Co. and is now at work opening the property. It is reached by the new Homer City branch of the Pennsylvania R.R. G. T. McCrea has sold a half interest in his farm to George W. McHenry, of Spangler, Penn., for \$15,000. The two men will form a company and open the coal at once. The B. and E. seams are both on the property, which is located just east of the mines of the Jones Coal Co. Estep Brothers, of Indiana, are opening a modern mine on the Clark Brothers farm, near Lovejoy. The property consists of about 1000 acres and the new operation will be one of the largest in the northern section of the county.

**Somerset**—New coal operations continue to spring into existence all over Somerset County. There have been over 100 new mines opened in the county in the past six months and the railroad companies are working continually to handle the increased production from this field. It is rumored that the Western Maryland will build into the northeastern section of the county through Berlin to care for the new territory to be developed there.

**Uniontown**—Announcement was made on June 14 by the members of the J. V. Thompson creditors' committee that with the approval of three-fourths of the unsecured creditors and the extension of the secured claims for a period of three years, the J. V. Thompson properties will be optioned for 30 days on July 12 to Ralph J.

Young, of St. Paul, Minn., representing the Hill interests, for \$5,000,000, the option to expire Aug. 12.

**Johnstown**—The Olson Coal Co., the newest of Cambria County's mining concerns, shipped its first car of coal on June 14. New mines will be opened in the near future, it is announced.

**Rossmoyne**—The new mine of the McCombs Coal Co. here is now in operation and shipments are being made over the Buffalo & Susquehanna R.R. Several houses and other buildings are being erected near the mine. John Rinn, of Indiana, is superintendent of mines.

**Heshbon**—The tippie and inclined plane of the new mine of the Caldwell Coal Mining Co. have been completed and shipments were started recently. The mine is located on the Pennsylvania and Buffalo, Rochester & Pittsburgh railroads and shipments will be made over both.

**Punxsutawney**—The Jeneau Coal Mining Co. has begun shipments from its new mine at Jeneau, the present production being about 175 tons per day. It will erect ten houses on the property not far from the mining operations.

**Pittsburgh**—W. H. Donner, president of the Donner Steel Co. has purchased 4500 acres of coal land in South Strabane, Amwell, West Bethlehem and Somerset Townships of Washington County. The price paid was \$340 per acre. This purchase covers an undivided one-half interest in the properties and involved a total of approximately \$1,530,000.

**Connellsville**—For the week ending June 9 the estimated coke production of the Connellsville region was 361,088 tons. This represents a total gain of 15,368 tons over the preceding week. Shipments by rail amounted to 354,479 tons, while 7000 tons were shipped by river, making a total of 361,479 tons, being an increase of 16,752 tons over the shipments of the previous weeks.

#### WEST VIRGINIA

**Fairmont**—Eighteen garden plots have been set aside at Idamay for the use of the boys of that community. All of these will probably be cultivated by the boys and young men, as the young fellows are very enthusiastic. W. H. Boyd, assistant agricultural agent for the county, will devote one day each week to assisting the boys.

**Interstate**—The power plant of the Consolidation Coal Co. at this place was recently destroyed by fire with a loss of \$35,000, while 160 men will be out of work for a short time. The fire originated in the boiler house and destroyed that structure. The company has made arrangements with the Monongahela Valley Traction Co. to supply it with current for operating the mines, but it will require several days to install the necessary equipment. This power plant furnished energy to mines numbers 64 and 44, which plants will be shut down until the necessary power arrangements can be made.

**Charleston**—A corps of engineers is at work on a 300-acre lease of coal land in the Hookstown district, making a preliminary survey preparatory to opening mines. The new company, incorporated by Pittsburgh people under the name of the Ohio River Co., has also purchased 1000 acres of surface land in the vicinity and will lay this out in town lots. A private railroad will be constructed from the new fields to connect with the extension of the Panhandle railroad near Shippingport, Penn. The coal will be shipped both by rail and water.

**Wheeling**—It was recently announced by an official of the Pittsburgh & Ohio Coal Co. that that firm had closed a deal for the purchase of the coal mine at Stewartsville, owned by John Walters, also several hundred acres of coal land adjoining the property on which the Walters mine is located. The company will open the mine at once and expects to have 150 men at work within a short time. The daily output will be about 800 tons.

**Kingwood**—It has been reported that although the demand for coal was never so great, practically all the mines in this section have been forced to suspend operations because of an inability to secure labor. Coke ovens have been virtually forced to shut down on account of inability to obtain coal.

#### ALABAMA

**Birmingham**—Six negroes were killed and two white men and two negroes seriously injured on June 13 by the explosion of a gas pocket in the Banner Mines of the Pratt Consolidated Coal Co. in the western part of Jefferson County. This

mine is operated with convict labor under the supervision of the state convict department and all the killed and injured were convicts except the two white men. The party of workmen were preparing to make an overcast at the time of the accident and the gas accumulation was immediately over the heads of the men and it is presumed that it was set off by their lamps. The property damage was negligible.

#### KENTUCKY

**Covington**—Suit has been filed here by the Middlesboro (Ky.) National Bank against the Greasy Creek Coal and Land Co., the Greasy Creek Mineral Co., the German National Bank, of Covington, the Phoenix National Bank, of Lexington, J. M. Camp, of Knoxville, and R. C. Ford, on notes of the defendants said to aggregate \$19,469.89. Mr. Ford is sued as agent for service of the coal companies, and he is also largely interested in them. A restraining order to prevent transfer in stock or other interest pending the suit is also asked.

#### OHIO

**Glouster**—A fire which broke out in an old mine adjacent to the Rendville mine No. 268, of the Ohio Collieries Co. threatened to make it necessary to seal the latter mine, as mine inspectors and the company's engineers found it difficult to confine the fire to the old workings. The mine produces 800 tons a day and employs 150 men.

**Columbus**—It is announced by the Ohio Utilities Commission that the freight congestion in Ohio has been relieved by approximately 50 per cent. in the past two weeks. This state of affairs is attributed to the injection of "pep" into the affairs of the railroads through inspections and suggestions of the commission. The improvement has come about through better cooperation between railroads, added attention on the part of railroad managers to the freight division of their business and a larger force of laborers put at work on the handling of freight. Inspectors a month ago started a state-wide investigation of conditions and found a bad state of affairs.

#### ILLINOIS

**Springfield**—Governor Lowden has sent to the legislature a message urging that the workmen's compensation act be extended and that it be made compulsory. In it he says: "It is very clear to my mind that if there was ever a time when our compensation laws for injury to the employee should be made compulsory, that time is now. The old method of adjusting damages for injury to the employee through litigation proved wasteful and expensive in the extreme. A very great proportion of employers have voluntarily come under this system, realizing its advantages over the old way. There is no reason that I can discover why all employers should not be brought by law under the jurisdiction of this board."

**Alton**—The Alton river terminal will be completed by July 1. Coal from the mines of the inner group and from Southern Illinois will be loaded at the terminal on barges for shipment up the Mississippi River. This will make Alton a more important coal-distributing point than it has been heretofore.

**Murphysboro**—The Gus Blair Big Muddy Coal Co., of Murphysboro, has sold all of its coal and mineral lands to the West Virginia Coal Co., of St. Louis. The transaction is one of the largest that has been negotiated in Jackson County in years. The West Virginia company has extensive holdings and operates mines at Belleville, Marion and Carverville. Gus Blair is head of the Blair company.

**Hillsboro**—The Hillsboro Coal Co. paid to its employees \$18,000 last payday. This was the largest pay ever made by the company. Many of the miners drew as high as \$100 for 12 days' work.

#### PERSONALS

**J. E. Echard**, of Connellsville, has resigned his position as chief electrician for A. Overholt & Co., to accept a similar position with the H. C. Frick Coke Co., at the Everson shops.

**C. W. Hays**, sales manager of the Stroh Steel Harden Process Co., of Pittsburgh, formerly with Boyts, Porter & Co., of Connellsville, has been elected secretary of his present connection.

**William E. O'Donnell** has been appointed inspector of transportation for the Pittsburgh & Lake Erie R.R. with headquarters at Pittsburgh. He was formerly chief clerk at Dickerson Run.

**T. P. Stanton**, formerly soliciting freight agent of the C. & N. W. Railroad, at New Orleans, has been appointed sales manager of the Lumaghi Coal Co., St. Louis, Mo., succeeding E. G. Lawrence, who died recently.

**Paul Adkins** recently resigned his position with the F. W. Woolworth Co., at Cleveland, to accept the secretary-treasurership of the Eclipse Pocahontas Coal Co. Mr. Adkins will be located at Dan, W. Va.

**Frank Smith**, of Ebensburg, Penn., is now superintendent in charge of the new operations of the Ferrier Run Coal Co., in Brush Valley Township, Indiana County. Mr. Smith will have his headquarters at Indiana, Penn.

**A. E. Thomas**, formerly superintendent with the Fort Branch Coal Co. of Logan, W. Va., and now with the Island Creek Coal Co. at Holden, W. Va., has been appointed superintendent of that company's mines Nos. 5, 6, 9 and 10.

**I. L. Martin** of Lost Creek, W. Va., recently resigned as superintendent of the Calif Coal Co., and the Calif coal mining plants at Lost Creek in order to become superintendent for the Consolidation Coal Co.'s No. 39 mine at Mount Clare.

**C. A. Newman**, formerly manager of sales promotion for Henion & Hubbell, Chicago, wholesalers in power pumps, mining and mill supplies, has been made sales manager of the Boiler-Kote Co., with general sales offices in the Fisher Building, Chicago.

**Miss Norma Cornwall**, an expert in physical training, has been secured by the Employment Relationship department of the Consolidation Coal Co. to supervise the playgrounds at Idamay, Carolina and Watson in West Virginia, and will assume her new duties at once.

**George Watkin Evans**, consulting engineer for the government on the development of the Matanuska coal fields of Alaska, states that the federal authorities are contemplating taking over the Eskra creek mine being worked in that field and developing it on a large scale.

**George C. Simpson**, for several years general sales agent of the Carterville & Herrin Coal Co. at Chicago, the properties of which at Herrin, Ill., were recently sold to the Reliance Coal Co., of Minneapolis, is now the northern sales manager for the Ellis & Richner Coal Co. of St. Louis, at Chicago.

**W. C. Lowther** has resigned his position with the Rochester & Pittsburgh Coal and Iron Co., at Punxsutawney and accepted the position of District Manager and Purchasing Agent for F. R. Long & Co., coal brokers of No. 1 Broadway, New York City. Mr. Lowther will have his headquarters at Indiana, Penn.

**C. A. Conant**, who recently resigned his position as steam engineer of the coal mining department of the Delaware, Lackawanna & Western Railroad Co., after serving 13 years in that capacity, in order to accept a similar position with the Delaware & Hudson Coal Co., was given a farewell banquet by the chief firemen of the Lackawanna company.

**P. F. Murphy**, chief clerk of the coal department of the Delaware, Lackawanna & Western R.R., was recently promoted to be assistant to Major W. W. Ingalls, vice president and general manager of the company's coal mining department. Herman H. Freuhan, for several years a stenographer in the auditor's department, was promoted to the chief clerkship.

**Milo Scott** of Melcher, Iowa, son of State Representative Charles H. Scott, is the champion coal miner of the state. In ten days' work he recently made a gross sum of \$140.36, from which is to be deducted \$16.75 for powder. This leaves him net \$123.61, or an average of \$12.36 a day. During the past six months, Scott's gross income was \$1264 from coal digging and the net \$1050.

**A. Simons**, after more than 30 years' experience as operator in the Crooksville district, has retired from active operation by disposing of the mine at Redfield to the Redfield Coal Co., a new concern recently organized by Zanesville capitalists. The capital stock of the new concern is \$200,000. Mr. Simons was mine boss in 1886, and by investing his savings in a coal acreage at Redfield was instrumental in developing that field. He is president of the Crooksville Operators' Association. For some time the business in Columbus has been operated under the name of A. Simon and Son, with A. G. Simon in active charge of the sales end. The business will be continued as a jobbing concern.

**Charles A. Magrath**, chairman of the Canadian section of the International Waterways Commission, has been appointed to the newly created position of fuel controller by the Canadian Government. This action is taken under the War Measures Act. Mr. Magrath is invested with full authority to control fuel distribution and prices throughout Canada. He will investigate the amount of stocks on hand and arrange for an equitable distribution of the supply, and take such steps as will secure the economical use of coal, increase the home production, and provide for sufficient importations to meet the deficit. An effort will be made to establish large stocks at inland points before the close of navigation. Mr. Magrath has been prominent in public life for many years. He was for some time engaged in irrigation and other development work in Southern Alberta, and was elected as representative of Medicine Hat in the Canadian House of Commons in 1908, taking a leading part in parliamentary work. He was subsequently appointed as a member of the International Waterways Commission in the work of which body he has displayed marked ability.

#### OBITUARY

**W. H. Wain**, after a sickness covering six weeks, died recently at his home in Calgary, Alta. Mr. Wain was a mining engineer well-known throughout the Canadian Northwest. He came to Calgary five years ago from Cardiff, Wales, and was in charge of the Georgetown Collieries at Canmore, Alberta, up to a few months ago. He is survived by his widow and four daughters.

#### INDUSTRIAL NEWS

**Pineville, Ky.**—The Northwest Coal Co., with a capital stock of \$100,000, has been incorporated by Robert E. Woods, W. J. Cunningham and W. R. Wood.

**Johnstown, Penn.**—James Meehan, Johnstown, and associates, have acquired a 2000-acre coal tract near New Florence, and are planning for extensive development work.

**Pittsburgh, Penn.**—The Victory Coal Co. has been incorporated with capital of \$25,000 to operate in local territory. A. J. Soisson, Bellevue, is the principal incorporator.

**Uniontown, Penn.**—The Point Marion Coal Co. has been incorporated with a capital of \$75,000 to operate coal properties in this vicinity. E. D. Brown is the principal incorporator.

**New York, N. Y.**—The Duryea Mfg. Co., manufacturer of Wooster belting, has moved its offices from 69 Wall St., and 50 Church St., N. Y. City, and Jersey City, N. J., to Bayonne, N. J.

The General Electric Co. recently moved its offices from 30 Church St. to the Equitable Bldg., 120 Broadway.

**Johnstown, Penn.**—The Warren Collieries Co., recently organized, is planning for the immediate development of property near Nanty-glo. The initial operations will include work on two large new drift mines.

**Midvale, Ohio**—The Midvale Coal Co. has been incorporated with a capital of \$50,000 to mine and sell coal. The incorporators are R. W. Rutledge, H. E. Cole, Alice Cole, Cora B. Rutledge and Homer I. N. Stafford.

**Columbus, Ohio**—The June Coal Co. has been incorporated with a capital of \$15,000 to mine and sell coal. The incorporators are T. C. Collins, W. T. Faseig, J. R. Schwartz, Ralph G. Martin and E. Hauck.

**Oklahoma City, Okla.**—The Price Coal Co. of Pierre, S. D., has been granted a permit to do business in Oklahoma by Secretary of State Lyon. The company will maintain state headquarters at Oklahoma City.

**Wellston, Ohio**—The Wellston Hill Coal Co. has been incorporated with a capital of \$10,000 to mine and sell coal. The incorporators are Jerry Morrow, Frank C. Morrow, H. C. Morrow, J. H. Browne and W. F. Schadel.

**New York, N. Y.**—The Superior Coal Co. has been incorporated in Delaware with a capital of \$100,000 to operate coal-mining properties. Laurence L. Cassidy, Albert Brauer and John H. Lawrence, New York, are the incorporators.

**Nelsonville, Ohio**—The Hysell Run Coal Co. has been incorporated with a capital of \$25,000 to mine and sell coal. The incorporators are Anthony Robinson, George A. Wraith, W. B. Hendershot, L. G. Worstell and Grace M. Stickney.

**Cleveland, Ohio**—The Cleveland & Morgantown Coal Co. has been incorporated with a capital of \$300,000 to mine and sell



coal. The incorporators are J. C. Heinlein, J. A. Heinlein, David H. James, J. E. Fox and Fred Sprigge.

**Hopedale, Ohio.**—The Bates-Williams Coal Co. has been incorporated with a capital of \$30,000 to mine and sell coal. The incorporators are William P. Bates, John Williams, Anna R. Williams, Letha Bates and Raymond H. Black.

**Kimball, W. Va.**—The Safety Pocahontas Coal Co. has been incorporated with a capital of \$25,000 to operate in the Browns Creek district of McDowell County. H. K. F. and S. R. Bank, Kimball, and L. Kaufman, Bluefield, are the incorporators.

**Greensburg, Penn.**—Frank W. Conway has purchased about 75 acres of coal land in the Pittsburgh vein in South Hunting-Township. The purchase price was almost \$20,000. It is stated that Mr. Conway will develop the property at once himself.

**Johnstown, Penn.**—At a receiver's sale on June 13, 49 tracts of land belonging to the Merchants Coal Co. were sold. All the land was purchased by W. R. Robinson, attorney for the bondholders. The aggregate consideration was about \$750,000.

**Charleston, W. Va.**—The Barren Creek Coal Co. has been incorporated with a capital of \$25,000 to operate at Barren Creek, Clay County. W. C. Delaney, St. Albans, J. B. Rammage and W. D. Evans, Charleston, are the principal incorporators.

**Dover, Del.**—The Perry-Hazard Coal Co. has been incorporated with a capital of \$100,000, with headquarters at Chicago, to operate coal mining properties. The incorporators are Thomas H. Watson, R. C. Holbrook and Jesse D. Payne, all of Chicago.

**Dayton, Ohio.**—The American Coal Mining Co. has been incorporated with a capital of \$10,000 to mine and sell coal. The incorporators are Albert J. Zimmerman, Agnes Zimmerman, Catherine M. Tierney, Michael J. Tierney and Carl W. Zimmerman.

**Huntington, W. Va.**—The Balcon Coal Co. has been incorporated with a capital of \$50,000 to operate coal-mining properties in Boone County. The incorporators are J. H. Murray, A. J. Connelly, B. I. Murray, C. E. Coryell and J. G. Biggs, all of Huntington.

**Mangum, Okla.**—The DeArman Coal Mining Co. has been organized here with a capital stock of \$100,000 and charter has been filed in the office of Secretary of State Lyon at Oklahoma City. The incorporators are T. S. DeArman, P. A. Janeway and C. P. Hamilton.

**Louisville, Ky.**—A number of the large coal-burning packets which have been operating in the Ohio River trade have been withdrawn by their owners on account of the advances in the cost of coal. Their places are being filled by smaller, oil-engine-propelled craft.

**Masontown, Penn.**—A meeting of mining men anxious to become more proficient in their work was held in Masontown recently to arrange a mining school and institute. Such mining schools are becoming quite popular in western Pennsylvania, as well as in other fields.

**Jackson, Ky.**—The River Side Coal Co., recently incorporated by Emory Cain, C. E. Tuttle and others, has contracted for 10 miners' houses at the site of the mine on the bank of the North Fork River, and proposes construction of an equal additional number in the near future.

**Fairmont, W. Va.**—The Cambria Coal Co. has been incorporated with a capital of \$150,000 to operate coal properties in the Eagle district, Harrison County. M. D. Faunce, Lakewood, Ohio; W. E. Hanlon, B. P. Porter, G. D. Ewart and L. F. McGrath, Cleveland, are the incorporators.

**Greensburg, Penn.**—Pittsburgh capitalists, headed by Charles S. Bygate, have closed a deal for a block of coal containing 175 acres, located two miles southwest of Irwin. The purchase price was \$218,750. Two shafts will be sunk at once and railroad extensions made for early operations.

**Bakerton, Penn.**—The Sterling Coal Co. has purchased all the lands and buildings of the Bakerton Land and Improvement Co., the consideration being in the neighborhood of \$250,000. Other buildings will be constructed by the new owners for the use of the miners employed at the operation.

**Oklahoma City, Okla.**—The Mutual Coal Stripping Co., of Oklahoma City, has been organized with a capital stock of \$25,000 and charter has been filed with the secretary of state. The incorporators are D. J.

Jorden, Oklahoma City; S. C. Aubrey, El Paso, Texas, and E. W. Hogan, McCurtain, Okla.

**Cambria, Penn.**—The Cambria Steel Co. has acquired a tract of about 4500 acres of coal property in West Bethlehem, South Strabane, and other townships in Washington County at a price of about \$340 per acre. The company is reported to be planning for extensive operations on the properties.

**Baltimore, Md.**—The Cumberland Big Vein Coal Co. has been incorporated, with headquarters at 136 Baltimore St., Cumberland, Md. The capital stock is given as \$25,000. Incorporators named are Edward J. Ryan, John J. Ryan, I. Blaine White, James M. Conway, I. Robert Lichtenstein and L. Lee Lichtenstein.

**Hanover, Penn.**—The Lehigh & Wilkes-Barre Coal Co. announced on June 7 that 80 new homes will be built for employees in this town, Newport and Wanamie. Plans for the homes are somewhat of a departure from the common company house. Each building will have six rooms and a bath, besides laundry facilities.

**Hopkinsville, Ky.**—The Mannington Coal Co., with a capital of \$50,000, has been incorporated by John A. Brasher, of Madisonville, Ky., who will be president, N. G. Hauger, of Louisville, secretary-treasurer, and others. The company has acquired coal lands in this (Christian) county and proposes to develop them.

**Coalton, Okla.**—The Davison-Johnson Coal Co. has been organized here. The new company is capitalized at \$5000, according to articles of incorporation filed in the office of Secretary of State Lyon at Oklahoma City, and the incorporators are: J. P. Davison, of Coalton, B. P. Davison, of Coalgate, and John Johnson, of Shluter.

**St. Louis, Mo.**—The St. Louis Coal Club at its last meeting protested against the proposed increase of 15c. to 40c. in coal freight rates from the Illinois field to St. Louis. Through the efforts of officers of the club the St. Louis Chamber of Commerce sent a representative to protest to the Illinois Public Utilities Commission at Springfield.

**Starford, Penn.**—The Starford Coal Co. has been organized and has leased a large tract of coal land near here. It has a small mine in operation at the present time and is constructing a siding that will give it a connection with the Pennsylvania and New York Central railroads. Work has also been begun on a tippie and other outside improvements.

**Paducah, Ky.**—Notice has been given by railroads serving Paducah that the rate on domestic sizes of coal shipped into the city will be raised from 80c. to 90c. a ton, beginning with July 15. The Board of Trade has filed a vigorous protest and it is stated that formal appeal to the Railroad Commission will follow an attempt of the railroads to advance the rates as announced.

**Covington, Ky.**—The Federal Court of Appeals, at Cincinnati, has upheld the decision of Federal Judge A. M. J. Cochran, holding that the liquidation of the affairs of the Continental Coal Corporation must be managed under the involuntary bankruptcy petition filed in the Kentucky court. The coal corporation has filed a voluntary petition in Tennessee and sought to have the liquidation carried out under that proceeding.

**Fairmont, W. Va.**—The Berryburg Coal Co. has purchased a tract of coal in the vicinity of Fairmont. Andrew B. Crichton is at the head of the purchasing company and it is expected that coal will be shipped from the new operation in August. A branch line of the Baltimore & Ohio R.R. is being constructed to the property and work has started on the erection of 50 houses for the miners.

**Windber, Penn.**—John Lochrie, coal operator, with extensive interests in central Pennsylvania, has completed 20 houses for miners at Central City, has under construction 20 more, has awarded contracts for an additional 40 and when this work is completed, proposes to double the order. All of the buildings will be of modern design far from the "company row" order so frequently seen in this section.

**Prestonsburg, Ky.**—The Lorain-Elkhorn Coal Co. has been organized here by W. S. Wells, J. K. Wells and E. M. Clay, with a capital of \$15,000 for a development on Beaver Creek. E. M. Clay will be manager. The initial work is to start at once.

The Hall Coal and Land Co. has also been organized here by Hiram Hall, C. W.

Hall and Martha Hall with capital of \$3000. This firm will deal in coal lands and make coal leases.

**Pittston, Penn.**—A contract for the erection of cottages for mine workers of the Buttonwood and Wanamie operations of the Lehigh & Wilkes-Barre Coal Co., has been awarded to the Nanticoke Construction Co. The amount of the contract will total nearly \$200,000. The 40 houses for mine workers are to be erected in small parks, set off with box hedges, and will be fitted with electric lights, hot and cold water and steam heat.

**Cornettsville, Ky.**—The East Kentucky Coal Co. has just been organized here by J. E. Jones, Hazard, P. J. Cross, Jellico, Tenn., J. W. Alloway, Jellico, Tenn., and W. G. Jenkins, Jackson, Ky., with a capital of \$50,000. The company has acquired the Pratt coal lands on the Louisville & Nashville main line and will start a development by June 10. A plant equipped electrically with a capacity of from 600 to 700 tons daily will be developed.

**Marion, Ohio.**—It is officially announced by the Erie that the already extensive yards at this triple division point of the system will be enlarged to practically double the present size, owing to the great volume of business. Five or six new tracks, several miles in length, will be laid at once, and it is probable that 15 more tracks will be laid before the work is finished. A new "hump" will also be installed, so that cars may be switched to various parts of the yards without the use of yard engines.

**Cincinnati, Ohio.**—City authorities are seriously considering the suggestion that a coal mine be acquired to furnish the various departments of public works with fuel, on account of the high price of coal and the difficulty in securing adequate supplies. The fact that Cleveland has taken steps toward such action has had considerable weight. Mines on the route of the Cincinnati Southern R.R., which is owned by the city, running through Kentucky, are said to be available for this purpose.

**Wellsburg, W. Va.**—An important business transaction was completed a few days ago whereby the property of the West Virginia-Pittsburgh Coal Co. was transferred to the Pittsburgh Mining Co. This transaction embraces three mines, one at Collier and two near Wellsburg, also 3500 acres of Pittsburgh vein coal and 5000 of the Shaft vein of coal. The headquarters of the purchasing company are in Cleveland, Ohio. Officials of the new company have announced that no changes will be made at the present in the operating forces of the mines.

**East St. Louis, Ill.**—The East St. Louis Chamber of Commerce, after listening to the railroads' side of the proposed 15 per cent. increase in freight rates, as presented by a committee of assistant general freight agents, adopted a resolution agreeing to abide by such a relative increase in Illinois and to urge that the Illinois Utilities Commission accede to such increase. The Chamber, however, will continue its opposition to a proposed disproportionate increase in coal freight rates in Illinois. Instead of the 15 per cent. general increase which is being sought by the railroads before the Interstate Commerce Commission, they are asking the Illinois Utilities Commission and the Interstate Commerce Commission to allow an increase of 15c. per ton on coal shipments in Illinois. This would amount to a 40 per cent. increase. R. W. Ropiequet, attorney for the Chamber, has been notified that the hearing set for June 23 has been continued indefinitely.

**St. Louis, Mo.**—A careful survey of the conditions in the southern Illinois field is rather annoying to a large element of the retail trade in the Southwest. In the Franklin County field there is a gradual narrowing down to the control of the entire field by a few large companies. These people are disposed toward shipping their coal to the Northwest and contracting it to large interests in that section. In the Williamson County field the independent mines are being taken over by the larger companies that are selling the output to railroads and in a general way getting control of the independent situation. This is causing a shortage of coal in the Southwest, especially on the Iron Mt., and the condition is a serious one for industrial plants located in that section. Unless the new owners agree to take care of the Southwest, some new adjustment of coal rates must be arranged to take care of this territory. At the present time negotiations are under way for another large mine on the Iron Mt. system at Herrin, the entire tonnage to be sold for railroad purposes.

# Market Department

## GENERAL REVIEW

**Anthracite** shippers concentrating their efforts on the outlying markets. Prospects of Government regulation limit buying at ruling high levels. Lake shipping becoming heavy. Steam trade slows up in the Middle West.

**Anthracite**—Shipping interests are obviously concentrating their efforts on getting the outlying markets supplied. Shipments to the West, to downeast points as well as up the Lakes are in large volume, while those sections near the mining regions are receiving only meagre supplies. This action has been taken at the instance of the Federal Trade Commission and, according to their plans, this movement will be continued for several weeks yet at least. There is generally a distinctly better feeling in the trade as a result of the heavy shipments, and it is thought that conditions in the fall may be better than has been anticipated. Some of the independent operators are now accepting future orders which will be billed at prevailing prices at time of shipment. Dealers in most of the Eastern markets are not receiving anything like their usual requirements.

**Bituminous**—In spite of the growing tendency among consumers to stay out of the market in anticipation of lower prices later, the situation continues steady. The proposed plan for pooling tidewater shipments, the frank statement of Chairman Peabody of the Fuel Board that Government regulation of prices may be expected within the next 60 days and the abrupt action of Secretary Daniels in arbitrarily fixing the price for Navy coal, have all tended to encourage the buyers in the belief that some relief from the ruling prices may be in sight. Buying is consequently limited to only the most urgent needs, while production and movement are showing a very material improvement except in isolated cases.

**Lake Trade**—Lake shipping is under way in full blast, and the heavy movement in that direction has served to stiffen up the market notably. The outlook for the summer is for a general scarcity of fuel and stiff prices, this opinion being substantiated by the great difficulty the state institutions are having in getting bids on their contracts and the high prices quoted on such bids as they are able to obtain. Very little business is being done in contracting, most of the coal now moving on temporary arrangements of various kinds. There are some operators who express the belief that the coming winter may see extraordinary prices prevailing, but the Government has shown its ability to cope with these in the anthracite trade and will no doubt be able to handle a like situation in the soft-coal business. There has been some incipient congestion at the loading ports, but this is not serious, and it is generally felt that the pooling arrangement has been an important factor in increasing the car supply.

**Middle West**—The market is slightly easier, industrial consumers showing a tendency to withdraw in apparent anticipation of Government regulation of prices in some form or other, though this is being largely made up by the retail trade taking all the tonnage offered. Buying is generally on a more conservative basis, and the smaller steam sizes are actually difficult to move in some instances. Movement from the upper Lake ports is heavy, the May shipments exceeding those for 1915 by 4800 cars, though being 1600 cars less than the same month in 1916. The railroad fuel supplies continue at a low level, and it is likely the roads will enter the fall with very meager stocks. Except on certain limited sizes, the mines are all covered with more orders than they can fill for the current month, and business for July is being accepted at the ruling prices prevailing then.

**A Year Ago**—Anthracite sizes changed. Market generally well sustained. Mobilization of militia further accentuates labor shortage. Bituminous firm and exports expanding. Pittsburgh strike situation less serious. Lake trade continues increasing and Middle Western market in excellent condition.

## Comparative Average Coal Prices

The following table gives the range of mine prices in car lots per gross ton (except where otherwise noted) on 12 representative bituminous coals over the past several weeks and the average price of the whole group for each week:

Price of the whole group for each week.							Gross Averages <sup>3</sup>	
Boston	Year Ago	June 26	June 16					
Clearfields.....	\$1.10@1.60	\$5.25@6.00	\$4.75@5.50			1917	1916	
Cambria and Somersets.....	1.35@1.75	5.50@6.25	5.00@5.75	Feb. 10	4.70@4.95	1.73@1.91		
Pocon. and New River <sup>1</sup> .....	2.80@2.85	7.25@7.50	7.50@8.00	Feb. 17	4.67@5.04	1.71@1.90		
Philadelphia				Feb. 24	4.95@5.29	1.64@1.84		
Georges Creek (Big Vein)....	1.90@2.00	5.75@6.00	6.00@6.25	Mar. 3	5.10@5.48	1.56@1.74		
W. Va. Freeport.....	1.15@1.25	5.00@5.25	5.25@5.75	Mar. 10	5.36@5.61	1.53@1.68		
Fairmont Gas mine-run.....	* 1.40@1.50	5.25@5.50	5.25@5.50	Mar. 17	4.80@5.19	1.46@1.65		
Pittsburgh (steam coal) <sup>2</sup>				Mar. 24	4.64@4.94	1.49@1.66		
Mine-run.....	1.60@1.75	4.75@5.00	4.50@5.00	Mar. 31	4.20@4.44	1.46@1.61		
2-in.....	1.70@1.80	4.75@5.00	4.50@5.00	Apr. 7	4.07@4.36	1.44@1.60		
Slack.....	* 1.50@1.65	4.95@5.05	5.00@5.25	Apr. 14	4.01@4.35	1.45@1.61		
Chicago (Williamson and Franklin Co.) <sup>2</sup>				Apr. 21	3.83@4.14	1.46@1.62		
Lump.....	* 1.45@1.55	3.50@3.75	3.50@3.75	Apr. 28	3.81@4.12	1.45@1.62		
Mine-run.....	1.20@1.30	3.00@3.25	3.00@3.50	May 5	4.04@4.40	1.45@1.59		
Screenings.....	* .95@1.00	2.75@3.25	3.00@3.75	May 12	4.64@4.98	1.44@1.59		
Gross average <sup>3</sup> .....	\$1.51@1.67	\$4.81@5.15	\$4.77@5.23	May 19	5.08@5.54	1.42@1.56		
				May 26	5.10@5.58	1.41@1.55		
				June 2	5.00@5.46	1.47@1.63		
				June 9	4.80@5.24	1.52@1.72		

<sup>1</sup> F. o. b. Norfolk and Newport News. <sup>2</sup> Per net ton. <sup>3</sup> The highest average price made last year was \$4.80@5.33 made on Nov. 25. \* Price lower than the week before. † Price higher than the previous week.

## BUSINESS OPINIONS

**Iron Age**—While the question of Government prices for steel products is being made a political football in Congress, with no outcome yet from the jumble of price-fixing by conflicting departments, boards and committees, the markets both for iron and steel may go on advancing with no signs of control. Many producers have stopped selling in the face of high offers from eager consumers. Others, as in the case of the leading wire interests, have refused to advance their prices. But such action does not have the intended effect.

**American Wool and Cotton Reporter**—Transactions in wool have been in rather less volume than for the previous week and the market seems to be devoid of any particular feature. Conditions are quiet, but the inherent strength remains. There is very little speculation. Most of the wool sold is South American because there is more of that kind on the market. In the West the growers' prices seem to be increasing daily.

**Dun**—With indications of returning activity in branches which have experienced a more or less protracted lull, the general position of business is stronger and sentiment has noticeably improved. The revival in distributive trade has continued with the more reasonable temperatures, and though not all reports are favorable, results at the retail counters are now more uniformly encouraging. Commercial failures this week are 277 against 261 last week, 277 the preceding week and 295 the corresponding week last year.

**Bradstreet**—While trade reports still are marked by indications of conservatism, optimism is returning, the West being distinguished in this respect, while the East seems more conservative, partly because of its pall of wet and cloudy weather. But the broad undercurrents are making for improvement, enormous government buying, actual or potential, exerting the strongest pull, with the evident success of the subscription of the \$2,000,000,000 Liberty Loan also playing a leading rôle.

**Dry Goods Economist**—The sensational advance of raw cotton to a point considerably above 25c. a pound has created unprecedented conditions among mills and their selling agents. New York commission houses have received telegrams from the plants they represent ordering the withdrawal of goods from sale. No prices are as yet being made on goods for future delivery and only on goods now in stock do requests for quotations bring any definite figures. The new price trend is shown, however, in the advance of print cloth convertibles in Fall River to the extent of from 5 to 10 per cent.

**Marshall Field & Co.**—Wholesale distribution of dry goods for the current week has been in larger volume than for the corresponding period of 1916. Road sales for immediate shipment are slightly behind those of a year ago, but are considerably in excess for future delivery. Customers have been in the market in fewer numbers.

## CONTRACT ITEMS

**Columbus, Ohio**—The Columbus Board of Education has awarded the contract for approximately 10,000 tons of coal for the coming winter's supply. The price was more than twice that of last year, or about \$60,000 instead of the usual amount, \$20,000. Only one bid was submitted and that was by the Franklin Builders' Supply and Coal Co., at \$6.50 for Hocking lump, delivered; \$6.25 for Hocking mine-run, delivered, and \$6 for Hocking nut, pea and slack, delivered. The board of education had invited practically all operators and jobbers in the city to bid on the contract.

**Columbus, Ohio**—Coal operators and wholesalers refused to bid for furnishing the supply of coal for Ohio State University when bids were opened recently. They claim that the uncertainty of the market makes it impossible to fix future delivery prices for such large quantities as the university demands.

## Current Events

**Prices**—Price conditions have been very mixed during the past week, due to the significant statements emanating from Washington concerning the fixing of prices on commodities of all kinds. The net result has been a narrowing of quotations, the maximum figures of last week showing a decline of eight cents and the minimum figure an increase of four cents. The low grade fuels at down East points and Pittsburgh district prices also touched higher levels, while the higher grades on the Atlantic Seaboard are off twenty-five cents per ton, and slack coal in the Middle West declined twenty-five to fifty cents per ton.

On Monday, June 18, Secretary Daniels announced a tentative figure of \$2.33 per ton as the base price on the Navy contract involving one and three-quarter million tons, pending an investigation and report by the Federal Trade Commission. Payments on account will be made on this basis. The Navy has been paying \$2.88 per ton delivered, and the operators offered to furnish the coal at \$2.95 per ton at the mine.

The official Government figures on the bituminous exports from New York harbor for May of this year show that the average value per ton was \$7.18 as compared with \$3.46 for the same month last year.

**Production**—Shipments of bituminous coal over the thirteen leading carriers for the first three months of the current year, according to the belated Government statement, amounted to only 31 million tons, as compared with 33½ million tons for the same period last year.

Carload shipments of bituminous coal over 82 originating roads for May of the current year, show a very extraordinary increase amounting to 740,000 cars, as compared with 658,000 cars the preceding



month and only 597,000 in May of last year. The average number of cars loaded in May of this year showed an increase of 8 per cent. over the preceding month and 24 per cent. over May in 1916.

Receipts of coal at Milwaukee from the opening of navigation up to and including June 18 were 795,762 tons, of which 139,886 tons were anthracite and 655,876 tons bituminous. For the same period last year the receipts of anthracite aggregated 146,401 tons and bituminous 896,407 tons, or a total of 1,042,808 tons.

**Transportation Notes**—President Smith, of the Louisville and Nashville R.R., testifying before the Grand Jury at Louisville in regard to the car-shortage difficulties, stated that his company had acquired 2700 additional coal cars since Jan. 1, and would shortly have about 24,000 cars altogether. The company now has about 4000 more cars than it owned a year ago, but the percentage on its own line on June 1 of this year was only 66.55, as compared with 78.46 on July 1 last year. The Ohio Utilities Commission recently announced that the freight congestion in that state had been reduced by 50 per cent. during the preceding two weeks.

The movement initiated last month to organize the Illinois Coal Traffic Bureau is progressing to a point where producers with an aggregate tonnage of 20,000,000 or more have been enrolled. The Bureau will investigate the transportation and car-supply problem at the Illinois mines.

**Pooling Tidewater Shipments**—Discussion of this plan has recently turned in the direction of increasing all-rail shipments direct. Sentiment on the matter is still mixed; there is a growing belief that it will be exceedingly difficult if not impractical to effect a satisfactory segregation of the different grades of coal, and there is also the feeling that the railroads will be the chief beneficiaries by the plan. It is further pointed out that most of the big shippers already handle their business on along somewhat similar lines to the proposed pooling arrangement. However, it is generally agreed that it would be at least desirable to give the plan a thorough try-out.

An informal meeting of some fifty or sixty operators was held on Monday of this week in New York for the purpose of discussing the matter. There was considerable dissatisfaction expressed with the classification of certain coals and also of a number of the rules, particularly No. 13, which, it was felt, should be considerably modified or eliminated entirely. A further meeting of the coal interests was held on the morning of June 20, at Washington, followed by a general conference of all committees with the Federal authorities in the afternoon.

**Fuel Shortage Items**—The Governor of Indiana has stated that a special session of the State Legislature will be called to enact a law fixing the profit of wholesalers and jobbers of coal at 25c. per ton above actual cost.

A board has been organized by the Milwaukee County Council of Defense to assume control of the coal situation in Milwaukee next winter. Mr. E. A. Uhrig, president of the Milwaukee-Western Fuel Co., is chairman of the board.

George L. McKibben, natural-gas expert for the Ohio Utilities Commission, has issued a statement warning gas consumers to lay in a supply of coal in anticipation of a probable inadequate supply of gas during the coming winter. A similar warning was issued by John G. Pew, president of the Peoples Natural Gas Co., at Pittsburgh. Already 55 out of 150 schools in the city are changing to coal. Mr. Pew suggests that each household provide a supplemental fireplace, stove or furnace for the most severe weather the coming winter.

President John Moore, of the Ohio Miners' Organization, in a recent statement said: "Probably never again will Americans have an opportunity to buy coal at as low a minimum price as last year."

**Legal**—The trial of the 51 West Virginia coal operators for violation of the Sherman Anti-Trust Act opened in New York on Monday, June 19. The case is coming up here for the reason that the Government alleges that the operators met here in January of the current year to fix upon prices for the ensuing twelve months. The Government alleges that the companies indicted control an output of 22,000,000 tons per annum on which they agreed to increase the selling price from \$1.25 per ton to \$3 per ton, effective Apr. 1. After a jury had been selected on Monday, the attorneys for the operators on Tuesday consumed most of the day in arguments to have the case declared a mistrial, because of the alleged prejudicial ef-

fect of Secretary Daniels' statement concerning the fixing of prices for navy coal.

**Legislative**—A bill was introduced in the Senate on Wednesday of last week, giving the President authority to fix the maximum price of coal and also to control the sale and distribution.

**Labor**—The unrest in labor circles throughout eastern Kentucky and eastern Tennessee, following a general unionization of the mine workers in those districts, has been considerably relieved by unofficial rumors that the Government would not countenance any suspension at this time.

Press reports under date of June 20 stated that the Canadian government will take over the operation of all coal mines in British Columbia owing to impossibility of settling the strike.

**Fuel Board**—Francis S. Peabody of the Fuel Board, held a conference with the committee representing the Brooklyn Chamber of Commerce in New York on June 16, at which he stated that if coal buying would stop for two weeks the price would drop \$2 per ton. He also stated that from assurances given them by labor leaders as to the continuous operations of the mines, anthracite production would be increased from 12 million to 15 million tons this year. Mr. Peabody stated further that he believed that there would be Federal legislation within the next 60 days fixing a maximum price for coal.

On Friday, June 15, President John P. White, of the United Mine Workers, together with five other officials of the Union, were appointed members of the Committee on Coal Production of the Council of National Defence, this move being taken in response to the rather bitter protest recently made by President White concerning the personnel of the committee. At the close of the meeting President White stated: "This action means that no union labor standards already achieved shall be broken down either by private or public interference."

A subcommittee of the Committee on Coal Production has been appointed to study the distribution of anthracite coal. The committee is headed by S. G. Warrier and made up entirely of prominent anthracite operators. The policy of the committee will be to divert as much coal to outlying sections as possible during the summer.

**Foreign Markets**—The French coal production for the first four months of the current year was: January, 2,100,000 tons; February, 1,900,000 tons; March, 2,367,000 tons; April, 2,250,000 tons. The calling out of the recruits of the class of 1918 tended to slow up the April production, but 7000 additional men have been withdrawn from the front for use in the mines.

It was stated in the House of Commons, on May 17, that it would probably be necessary to adopt some system of rationing coal in England this winter. The difficulty was ascribed to inadequate transportation facilities, and measures were to be taken to accumulate as much coal as possible during the summer.

The French government has suspended the use of hot water in hotels and private houses in Paris, except on Saturdays and Sundays, and the gas supply of private consumers will now be cut off at 9 p.m.

## Atlantic Seaboard

### BOSTON

Receipts at Hampton Roads diminish again. Much interest in pooling arrangement. Pocahontas and New River prices stationary; few spot sales. Pennsylvania grades slightly firmer, especially at Tidewater. Anthracite worries increase.

**Bituminous**—Buyers in this territory are keeping closer watch of the Hampton Roads situation than is commonly supposed. There is occasional buying at spot prices, but the purchases are made very quietly. The present condition of the water freight market helps out materially, rates being relatively soft, but a further increase in dumping will only accentuate the light receipts at the piers, a result that is already developing. Somewhat increased tonnage one week will encourage some of the shippers to make commitments weeks ahead. Demand from every quarter is so insistent that the agencies only pile up trouble for themselves when they yield to a very natural inclination to sell the utmost possible at present quotations, which remain firm at \$7@7.25.

Embargoes and inadequate car-service all-rail have caused Pocahontas and New River prices on cars to be firmly maintained. The disposition of New England railroads, as a matter of self-defense, to keep their coal cars so far as possible either on their own tracks or in transit back and forth to the region for fuel coal, is favorable to movement from Tidewater to inland points. Distributors have no difficulty getting \$10.75@12 for all they care to sell.

There is less day-dreaming about lower prices and lower water rates than a week or two ago. The large purchasers are mostly industrialists who are realizing good profits, and so long as coal can be had in enough volume to keep them running the price will not be so vital. They set the pace for others, and there is now more of a "grin-and-bear-it" attitude than was the case a few weeks ago. It is beginning to be realized that if water freights did recede to a marked degree it would at once be looked upon as an excess of supply and the tonnage might well be taken for other service.

Small lots of Georges Creek are percolating through, usually in the form of a few barge cargoes, but occasionally, too, in deliveries all-rail. As high as \$7 has been named f.o.b. mines for this grade, and sales are being reported. At the average New England point this would make \$10 coal.

Local difficulties still tend to keep down the output of Central Pennsylvania. Added to that the distribution of cars is not favorable to this territory, and where embargoes are in effect about half the time it is no wonder that consumers here are not able to accumulate. The coastwise freighting situation throws an enormous extra burden on the roads moving coal all-rail. Statistics this year will be very interesting.

Prices are decidedly firmer. The more desirable grades are up to \$6, especially in lots destined for Tidewater. All grades are scarce at Philadelphia and New York. Railroad movement is slow, and spot coal continues to command a premium over and above the f.o.b. mine price plus the tolls. There is nothing in the market at this writing to warrant any prediction of lower levels in the near future.

Bituminous at wholesale, f.o.b. loading ports at points designated, are quoted about as follows:

	Clearfields	Camb. and Somersets
Philadelphia.....	\$6.50@7.25	\$6.75@7.50
New York.....	6.85@7.50	7.00@7.85
F. o. b. mines.....	5.25@6.00	5.50@6.25
Alongside Boston (water coal).....	8.75@10.00	9.25@11.00

Pocahontas and New River are now quoted at \$7.25@7.50 f.o.b. Norfolk or Newport News, Va., for spot coal, and \$10.75@12 on cars Providence, Boston, or Portland for inland delivery.

**Anthracite**—Where retailers last year got 75 to 80 per cent. of their quota from certain of their sources of supply they are beginning to realize this year that they may not get 50 per cent. from the same shippers. To say that apprehension is increasing on the part of dealers is putting it very mildly. Those who have been accustomed the past year to get emergency supplies from the so-called "independents" are finding the latter are now quite indifferent to Eastern requirements. The recent statement by the Federal Trade Commission that the Government would not countenance a gross jobbing commission in excess of 20c. per ton is held responsible by some for the dearth of coal now offering in the open market. On the other hand some of the New York jobbing factors have assured their trade there would be some "reasonable price" coal during the present week.

Public sentiment seems to be pretty well lulled into repose by the various statements that have been put into print. One statesman in New England solemnly assured the public that domestic sizes would promptly be forthcoming in 50-car express trains, 100 hours from the mines to destination. What might be possible on a down grade in some other part of the country is not possible in this territory, and that is just on the matter of movement. What colliery there is that can load fifty steel cars for New England in "part of a day" remains to be discovered.

New England has its full quota of investigators just at present, but meanwhile coal is not coming forward in any better volume. Dealers are worried, and they have reason to be.

## NEW YORK

**Anthracite domestic sizes in good demand with supplies scarce.** Steam sizes easier and companies stocking some. Dealers urging shipments. Soft coal users delay buying in anticipation of an easier market and lower prices. Pooling rules not altogether satisfactory and changes advocated. Prices firm.

**Anthracite**—There is no letup in the demand for domestic coals. Dealers continue to bombard the wholesale offices for shipments, although there is not that urgency that existed a few weeks ago. Tidewater receipts are below normal and it is difficult to find a cargo of free coal.

Dealers who under ordinary conditions depend entirely upon company coals find themselves unable to fill their orders and are on the alert for any independent stock available. Some middlemen are said to have placed orders for domestic coal with independent operators to be billed at the market prices at the time of shipment. This procedure meets with the approval of the operators who are between two fires now that the Federal Trade Commission has taken a hand in the situation.

While some coalmen contend that the trade has received more coal so far this season than usual there are others who claim that receipts have not been more than 25 per cent. of the usual tonnages. The former say that householders who heretofore have gone to the country or seashore with their bins empty, knowing that it would be an easy matter to stock up in the fall have insisted upon getting the coal put away this spring. Then there are many dealers who, because of the lack of coal, are unable to work all their equipment, although they have many unfilled orders.

The opinion of some officials that there will be plenty of coal within a few weeks does not prevail among those who are in daily contact with the situation. It is pointed out that demand is now greater than the supply and with the operators sending their coal westward or to the line trade the prospects of the seaboard being taken care of before fall are slim.

Domestic coals are hard to find and quotations for coal at Tidewater are scarce. Regular customers are not receiving anything like their requirements even from the companies while most of the independent product is going elsewhere.

The steam coals are plentiful, with demand easy. Buckwheat No. 1 is in better shape than either rice or barley. The two latter sizes are being stocked. Independent boiler is plentiful, while there are loaded boats of what is practically culm being offered to the trade at \$2.75.

Exports during May from this port were 16,714 tons valued at \$133,327, as compared with 17,809 tons valued at \$94,613 in May of last year.

Current quotations, per gross tons, f.o.b. Tidewater, at the lower ports are as follows:

	Circular	Individual
Broken.....	\$5.40@5.55	
Egg.....	5.40@5.55	
Stove.....	5.65@5.80	
Chestnut.....	5.70@5.85	
Pea.....	4.10@4.55	\$5.50@5.75
Buck.....	4.00@4.15	5.00@5.25
Rice.....	3.40@4.05	4.00@4.25
Barley.....	2.90@3.10	3.00@3.25
Boiler.....		3.25@3.50

Quotations for domestic coals at the upper ports are generally 5c. higher on account of the difference in freight rates.

**Bituminous**—The tendency to delay buying is becoming more general and consumers who are not actually compelled to buy for immediate use are holding off for lower prices. On the other hand, when demand becomes brisk and coal at the docks scarce, prices stiffen. Some shippers look for a stronger market within a few weeks.

The proposed rules to govern the pooling of Tidewater coal have been discussed by the trade with the result that it is the belief among many that instead of coal being sent to Tidewater for re-shipment it will be sent directly by rail whenever possible. The classification of grades does not meet with the approval of the trade and it is thought likely that changes will be made before this feature of the pooling arrangement goes into effect.

Car supply has been below normal with the result that many mines that would have worked steadily have been thrown idle.

There has been some heavy buying here for New England delivery, while buyers at the mines have been paying \$5.50 for good grades for immediate shipment.

The railroads are again in the market and there are reports that they have confiscated considerable coal.

Good gas coal is scarce and Pittsburgh grades are being quoted at about \$5.50 at the mines. Slack is not to be had except in small lots with quotations around \$5.

Exports of bituminous from this port during last month show a decrease as compared with May of last year. Last month 995 tons were shipped with a valuation of \$7147, as compared with 4419 tons, valued at \$15,296 in the corresponding month of 1916.

Current quotations, per gross ton, f.o.b. Tidewater, for various grades are as follows:

	Port Reading	South Amboy	Mine Price
George Crk.			
Big Vein..	\$7.25@7.50	\$7.25@7.50	\$5.75@6.00
Tyson....	7.00@7.25	7.00@7.25	5.50@5.75
Clearfield..	6.75@7.00	6.75@7.00	5.25@5.50
South Frk..	.....	7.00@7.25	5.50@5.75
Nanty Glo..	.....	7.00@7.25	5.50@5.75
Som'r. Co..	6.75@7.00	6.75@7.00	5.25@5.50
Que'ho'ing.	7.00@7.25	7.00@7.25	5.50@5.75
W. V. Fa'm't			
Th'r'qua..	6.75@7.00	6.75@7.00	5.25@5.50
Mine-run....	6.50@6.75	6.50@6.75	5.00@5.25
West. Md..	6.75@7.00	6.75@7.00	5.25@5.50

## PHILADELPHIA

**Anthracite shipments light, with small hope of immediate improvement.** Production is good, but coal is going to other markets. Trade commission warns against spread of misleading information. Bituminous prices show slight changes, with but 50c. difference in all grades. Local receipts light. Slack in heavy demand.

**Anthracite**—For ten days shipments have been very light and continue so at this time. Stocks are so low and prospects for June shipments so poor, that the retailers are offering premium prices to the companies. These are promptly declined and as the regular customers of the big companies cannot now turn to the individuals, they are in a quandary as how to keep their men and teams active. All the companies are turning out good tonnages, especially for this time of the year, but the coal is not coming to this market.

This city is so close to the mines it is felt that it can better afford to be shut off from shipments now rather than those territories to which later in the season it would be difficult to ship. One of the large companies has announced that most of its coal has been going to other markets and that it will continue to go in that direction for the remainder of the month, and maybe even longer. Another large company, in replying to the urgent orders from its customers, states that the coal at this time is going to New England "by executive order," and that it hopes later in the season to give orders in this territory better attention. Heavy shipments are also being made to the various Lake ports.

The sales agents of the large mining companies often refer their customers to the individuals, thus hoping to relieve themselves of the responsibility of keeping them supplied, but as the smaller shippers are already swamped they usually turn down this business with the explanation they are caring only for dealers for whom they are the usual source of supply. This is done so consistently that it would seem almost to be a pre-arranged plan.

The individuals with the apparent approval of the Federal Trade Commission have advanced their prices until now their average rates are \$4.90 for egg, \$5.15 for stove, \$5.25 for chestnut and \$4.45 for pea. This it will be noticed is a flat increase of 75c. above the large companies on prepared sizes. It can be said, however, that a market for \$6.50 coal still exists, although there seems to be no general disposition just at this time to disregard the "suggestions" of the commission. As to pea coal the situation continues somewhat irregular regarding price, and we have heard recently of an offer of \$5 being made for this size to a dealer.

The acting secretary of the commission recently made a new suggestion to the operators, that no doubt is in accordance with the facts. It sent out a letter stating that it had been brought to the attention of the commission that the sales agents of some of the large anthracite operators are refusing to accept business; or are explaining delayed shipments at this time by giving reasons that do not exactly accord with the facts and tend to stir the fears of the dealers that there is a shortage of anthracite. The commission states that production is as large or larger than last year, but the consumers are all striving to ob-

tain supplies at once, with the result the dealers are oversold and cannot make prompt deliveries. The commission suggests that it would be to the interests of the selling agents to use arguments that will steady the trade and allay any further development of a buying panic.

Under present conditions the local retailers continue optimistic as to the future. They point out that with the collieries working six full days a week during July and August instead of two and three, which has been the custom of other years, the production of the big companies is bound to be greatly increased, and we feel that this market will accordingly be so well taken care of that conditions should be considerably easier by Sept. 1.

Complaints continue to reach the operators through the commission that, to say the least, are surprising. Dealers who have no claim whatever are entering what appear to be serious complaints, because certain shippers will not honor their orders. We know dealers, for instance, who for years refused to buy from certain shippers but who are now reporting these same shippers for neglecting them. If such cases were left to the adjustment of the salesmen, who for so long unsuccessfully solicited the business, they would be given scant attention.

The demand for broken coal continues out of all proportion to the supply and we understand \$5.50 at the mines is being freely offered; even at this, however, it is cheap when compared with coke, a fuel which many manufacturers at the present price of the latter would be glad to replace. Naturally the consumers of broken being unable to procure their full requirements are still turning to egg, so that with the call on this for both manufacturing and domestic uses, it is also short.

Locally the demand for stove and pea continues unabated and with no immediate signs of relief in sight. The prospects of gaining a supply of pea are growing less and less and it is the one size some shippers will not speak of optimistically. We believe that at least 50 per cent. of the production of some operators will be applied on contracts for manufacturing purposes. Because chestnut has been shipped more freely the immediate call is not so brisk as the other sizes, but it will be bought freely by the dealers if the opportunity arrives, if only as a substitute for pea coal.

Those concerns with water yards have been somewhat handicapped as to shipments, owing to a curtailment due to the excessive rains of the past week or ten days interfering with the movement of barges via the canals.

The dealers continue to concentrate their efforts on filling the cellars of customers, as the transient small lot trade has practically vanished. There has also been a falling off in new orders entered, but this does not mean anything in particular when they consider the number of unfilled orders that remain on their books. Most of the phone calls these days relate to the delivery of orders already in and buyers do not seem to tire of listening to the stock answers necessary under the circumstances. The one class of trade that is really causing the retailer uneasiness is those who want to close their town houses and do not have their coal in yet. The pressure from this source grows daily.

As to payments there is nothing at this time to give the sales agents any concern, as all bills continue, almost without exception, to be met when due. As a matter of fact, a tender of cash in advance is far from a rare occurrence.

The prices per gross ton, f.o.b. cars at mines for line shipment and f.o.b. Port Richmond for tide, are as follows:

	Line	Tide		Line	Tide
Broken....	\$5.00	\$6.15	Buck.....	\$2.90	\$3.80
Egg.....	4.15	5.25	Rice.....	2.40	3.40
Stove.....	4.40	5.60	Boiler.....	2.20	3.30
Nut.....	4.50	5.55	Barley.....	1.90	2.15
Pea.....	3.10	4.00			

**Bituminous**—Prices have been fairly well maintained and are about on a par with those of a week ago. There have been a few slight declines, about 25c. a ton on the best grades, and at the moment the tendency seems to be to draw all prices closer together, with not more than 50c. difference between any of them. There also seems to be a growing belief that lower prices are not to be expected this summer and there is little prospect of the usual summer decline. Yet in the face of such a tendency and with almost 50 per cent. of the entire production being sold on a spot basis it has been difficult of late to get the consumers to make purchases



until they are actually in need of coal, seeming to feel that maybe later they can get coal at a lower figure.

The car supply started very poorly this week, but there have been some promises of improvement and at this time it is running from 55 per cent. to 60 per cent.

Coal is not arriving here in very heavy volume, there being embargoes via the B. & O. R.R., as well as on shipments to Port Richmond and Port Reading piers. In addition it is stated the West Virginia operators have been favoring Lake orders for the past week and heavy tonnages are going to the Lake markets.

There continues to be an undercurrent of skepticism as to the feasibility of the pooling plan working out satisfactorily, despite the generally agreed benefits which would accrue from a shipping standpoint. The main objection is due to the proposed grading of the coal which will be necessary if the plan is to be adopted. At the last conference which was held here the number of grades had been tentatively reduced to 44, but even this number is entirely too large to be handled in the manner proposed.

Slack coal continues in heavy demand, with no indication of an increased tonnage being received here, although it was reported that some of the cement manufacturing plants, who are large users of this size were recently compelled to close their plants for short periods on account of labor shortage. The effect of this, however, could only be slight, as the companies continued to take in all the coal they could procure.

The prices per gross ton, f.o.b. cars at mines, are as follows:

Georges Creek Big Vein.....	\$5.75@6.00
South Fork Miller Vein.....	5.75@6.00
Clearfield (ordinary).....	5.50@5.75
Somerset (ordinary).....	5.50@5.75
West Va. Freeport.....	5.00@5.25
Fairmont gas lump.....	5.50@5.75
Fairmont gas, mine-run.....	5.25@5.50
Fairmont gas, slack.....	5.25@5.50
Fairmont lump, ordinary.....	5.25@5.50
Fairmont mine-run.....	5.25@5.50
Fairmont slack.....	5.25@5.50

#### BALTIMORE

**Anthracite dealers complain at the big premiums being exacted. Improved car service fails to bring more hard coal. Bituminous in good supply, but readily absorbed.**

**Anthracite**—Large premiums of fifty and seventy-five cents are added to generally any kind of hard coal that is needed in a hurry. This at a time when car movement is generally reported improved for the moment is particularly aggravating. With present prices here thirty-five cents above the old winter schedule, there is every indication that the trade will have to make another advance on July 1 to meet their increasing outlay.

**Bituminous**—The best supply of soft coal in some weeks is noted here. The rail movement for the week was excellent. Considerable coal, however, is still held up on sidings, behind other freight, where it was shunted two to three weeks ago. A rather wide range of prices is noted in spot coals, the lower prices being practically the same as the offerings at the mines. Where customers need coal they are still paying liberal prices, and where the few coal men who had a little over-supply went out to sell there was some cutting. Part of this was due to the fact that urgency is evident in car release. The government agents here are after both the coal and railroad men for quick dispatch. Some embargoes against certain coal men who had fifteen or more cars at tide for brief periods were noted, and this method of shutting off additional shipments brought quick action in getting rid of any surplus coal. Demand for slack is heavy and prices tight.

Prices to the trade at the mines per gross ton are about as follows: Georges Creek Tyson, \$5.25; Somerset, \$5; Que-mahoning, \$5; Clearfield, \$5; Freeport, \$4.75; Fairmont gas, three-quarter, \$4.75; run-of-mine, \$4.50; slack, \$4.75 to \$5.

#### HAMPTON ROADS

**Market firm. No change in prices. Great congestion of steamers. Heavy demand from Navy. Light receipts from mines.**

There is no change in recent quotations, but the market may be said to be stronger than a week ago. Inquiries for new business are more frequent and takings under contract are also heavy. Exports are also large, though how long this condition will obtain is problematical. It is reported that the first item to be considered in regard to an embargo on exports, is coal. It must be remembered, however, that our

coal is exported principally to our Allies and South America.

The congestion of steamers has been very heavy recently, fifty arriving one day. This condition has resulted in delays at the piers, but at this writing the situation has been somewhat relieved. The Navy Department is taking considerable coal at present and, as they have the preference, this also causes delay to commercial vessels. The movement from the mines is light, as usual, and stocks are down to comparatively nothing. Much comment is heard regarding the pooling plan of the Coal Committee, not all of it favorable by any means. However, coal shippers will render every assistance to the carrying out of the plan and do everything in their power to make it a success.

Dumpings at the Hampton Roads piers for the past several weeks were as follows:

	May 26	June 2	June 9	June 16
Nor. & West....	105,640	118,193	123,456	112,360
Ches. & Ohio....	83,666	114,536	91,387	83,959
Virginian.....	92,875	88,602	94,445	89,165
Total.....	282,181	321,331	309,288	285,484

## Ocean Shipping

#### OCEAN FREIGHTS

**June 18**—During the past week the steamer "Cleveland," about 2500 tons coal capacity, at Norfolk, was offered firm at \$30 Virginia to Buenos Aires, but was unfixable, as she was too prompt for any orders in the market. A small steamer was chartered for coals to the West Coast at \$15.50 per ton, all freight in advance, but this rate is very much under the market. Rates to all other destinations are firmer than they were a week ago, and very few charters for export coal were completed during this period.

We would quote freight rates on coal by steamer as follows:

	Europe	June 11	June 18
West Coast Italy	\$100.00 about		
Marseilles.....	100.00 about		\$100.00 about
Spain (Atlantic)*	30.00@36.00		30.00@36.00
Spain (Med't'n)*	32.40@38.40		32.40@38.40

Note—Charters for Italy, France and Spain read: "Lay days to commence on steamer's arrival at or off port of discharge."

	South America	June 11	June 18
Montevideo.....	\$30.00@30.60		\$30.00@30.60
Buenos Aires....	30.00@30.60		30.00@30.60
Rosario.....	31.68 about		31.68 about
Rio Janeiro.....	30.00@32.00		32.50 about
Santos.....	34.00 about		34.00 about
Chile (good port)	17.50@18.50		17.50@18.50

	West Indies	June 11	June 18
Havana.....	5.50 about		6.00 about
Cardenas, Sagua	6.75 about		7.50@8.00
Cienfuegos.....	7.50 about		8.00 about
Port au Spain....	10.75 about		10.75 about
St. Lucia.....	10.75 about		10.75 about
St. Thomas.....	8.75@9.00		8.75@9.00
Barbados.....	10.75 about		10.75 about
Kingston.....	7.00@7.25		7.25@7.50
Curacao.....	18.75@9.25		8.75@9.25
Santiago.....	7.50 about		8.00 about
Guantanamo.....	7.50 about		8.00 about
Bermuda.....	6.00@7.00		7.00 about

	Mexico	June 11	June 18
Vera Cruz.....	9.00@10.00		9.00@10.00
Tampico.....	9.00@10.00		9.00@10.00

\* Spanish dues for account of cargo. <sup>1</sup> And p.e.  
<sup>2</sup> Or other good Spanish port. <sup>3</sup> Net.  
 W. W. Battie & Co.'s Coal Trade Freight Report.

#### COASTWISE FREIGHTS

Nominally, water freights are about on the same level as a fortnight ago, \$3.50 at \$4, depending on destination and on the size of the tonnage, this from Hampton Roads. Privately, however, it is well understood that charters are being made at \$3 to Providence, and \$3.25 to Boston, or even less. A buyer who goes on a still hunt for a \$3 rate to Boston has more than a fair chance of success. This condition has brought quite a number of merchants into the spot market, and so long as bottoms meet with fair loading dispatch the number of charters will probably increase. It may well be that recent Federal efforts toward influencing a drop in coal prices is having a salutary effect on coal freights.

New York rates to Providence are down to \$1.40, 10c. more to New Bedford. Four dollars is still being paid to Penobscot Bay points, although 50c. less is now being sought by coal factors. The scarcity of coal is also an influence toward lower rates. Prompt loading is hard for vessels to secure.

## Lake Markets

#### PITTSBURGH

**Spot market continues steady. Lake shipments from Pittsburgh still relatively light.**

The spot-coal market averages about the same as a week ago. Steam is a shade stronger and gas a shade easier, reducing the spread between them, the market being thus neither weaker nor stronger. Car supplies are only moderate, though perhaps a shade above the average of two weeks and more ago. Lake shipments are increasing but still are not heavy from this district.

The steadiness of the spot market since Apr. 1 has been rather surprising. It has been thought that with so little contracting done, thus throwing so much business into the spot market, there would be rather violent fluctuations, according to car supply. A great deal of tonnage was arranged for regular shipment, with a weekly price settlement according to the market, and it appears now that this tonnage has acted as a balancing force. Instead of the spot market making the settlement price on these shipping contracts, as theoretically it does, it seems that in practice the weekly settlements have a tendency to fix the spot market.

Lake coal has also a regulating effect, as generally the Lake shippers will take 3-in. steam for Lake shipment at \$4.75, the price on Fairmount being \$4.25. Shipments from Fairmount have run heavy since the settlement of the Government case against the Fairmount operators, whereby they are required to ship all their coal to the Lakes in the last three days of each week.

We quote the spot market at \$4.75@5 for mine-run and \$5 for slack, steam, and \$5@5.25 for 3-in. gas, per net ton at mine, Pittsburgh district.

#### BUFFALO

**Bituminous prices firm. Extravagant predictions as to prices in future. Jobbers finding it hard to get their orders filled at the mines. Anthracite scarce as ever. Consumers uneasy.**

**Bituminous**—The trade drags along at a very slow pace. Reports come from Pittsburgh of predictions that bituminous coal will be \$10 a ton next winter, though it is not easy to see how this can be, for if the Government can interfere in case of anthracite it will do the same with bituminous. But whether it does or not the trade is sure to continue in a more or less unsettled condition for a long time. The railroads may be considered accountable for that whether it is their fault or not.

Bituminous jobbers still canvass the entire shipping field when they have an order to fill. The exclusive handling of this or that coal is past; wherever any coal is likely to be found the orders are sent, so that the mine owners must get the idea that there are several times the amount of coal wanted that is really ordered by the consumers. There are also complaints that the heavy consumers buy largely direct.

Changes in bituminous prices are small, most of them mere echoes of embargoes, which are still numerous. Quotations:

Youghiogheny Gas.....	\$6.25@6.75
Pittsburgh Steam.....	6.10@6.60
Ohio No. 8.....	6.05@6.55
Bessemer.....	5.95@6.45
Allegheny Valley.....	5.85@6.35
Cambria Co. Smithing.....	6.80@7.35
Pennsylvania Smokeless.....	6.85@7.35
All Slack.....	5.75@6.25
Cannel.....	6.50@7.00

All quotations are per net ton, f.o.b. Buffalo.

**Anthracite**—One concern, which distributes about half the coal to Buffalo, reports that it had 1000 tons for distribution at the first of the week, but only has a supply three days in a week. If the city burns not over 400,000 tons annually this ought to make sure of all that is needed, but the difficulty is that every consumer wants his full supply at once. There is not much talk now of independent anthracite. Consumers are uncertain as to the price restriction holding, but so long as they can get none they need not be disturbed.

Lake shipments for the week were 120,250 net tons, of which 6900 tons cleared for Chicago, 54,100 tons for Duluth and Superior, 29,650 tons for Fort William, 15,500 tons for Sheboygan, 6200 tons for Port Arthur, 2800 tons for Houghton, 2600

tons for Hubbell, 1500 tons for the Sault and 1000 tons for Traverse City.

Freights are 60c. to Chicago and Sheboygan, 50c. to Duluth, Fort William and Port Arthur, \$1 to Sault, 75c. to Hubbell and Houghton and \$1.25 to Traverse City. No steady rate has been established.

#### CLEVELAND

Car supply improving. Strong demand for Lake coal keeps prices up. Congestion at some Lake Erie docks.

While most of the Ohio mines have had a better car supply the past few days, in most cases about 75 per cent. of their capacity, prices have remained at same level as a week ago, mainly due to the strong demand for Lake coal. There has been some congestion at one or two Lake Erie loading docks, but Commissioner Frederick C. Baird has reported that the situation is well in hand.

Following are the market prices per short ton, f.o.b. Cleveland:

	Three-quarter	Mine-run	Slack
No. 8	\$5.50	\$5.50	\$5.50
Cambridge	5.50	5.50	5.50
Middle District	5.50	5.50	5.50
Hocking	5.25	5.25	5.25

#### COLUMBUS

Slight reaction brings lower prices on all grades. Car supply better.

The coal trade continues active, although a better supply has caused a slight decline in price. On the whole the market remains strong and the demand for all grades is firm.

The Lake trade is now the most important feature of the business. Operators are getting a large tonnage to the Lakes and it is being handled efficiently under the pooling arrangement. Lake prices are high and there is every reason to believe they will be higher before the season closes, judging from the heavy demand at the docks. The contract boat rate is 42¢, while free bottoms have no trouble in getting 50c. and even more.

Requisitions from iron and steel manufacturers are large and the same is true of other lines of manufacturing. Some of the larger consumers have succeeded in laying in a surplus and are in a better position than formerly. Railroads are taking a large tonnage and many have succeeded in signing up rather favorable contracts. Contracting for industrial plants is not active as producers are now selling most of their tonnage on the open market.

Production has been rather good in all mining sections. With the speeding up of railroads the car supply is much better and the output is now curtailed more by labor shortage than any other cause.

Prices on short tons, f.o.b. mines, are as follows:

	Hocking	Pomerooy	Eastern Ohio
Rescreened lump	\$4.50	\$4.75	
Inch and a quarter	4.50	4.50	\$4.50
Three-quarter inch	4.25	4.50	4.25
Nut	4.25	4.25	4.25
Egg	4.25	4.25	
Mine run	4.25	4.25	4.25
Nut, pea and slack	4.00	4.00	4.00
Coarse slack	4.00	4.00	4.00

#### DETROIT

Steam coal supply continues limited, with prices high. Anthracite also scarce. Lake movement improves, though still light.

Bituminous—Predictions of a more plentiful supply of steam coal are still unrealized in the local market. With a rather steady demand from buyers little coal is to be had. Jobbers and wholesalers find it difficult to provide for the requirements of their customers. With no coal on tracks and very little free coal in transit, at a time of the year when the supply is usually excessive, consumers have been able to get only a sufficient amount to provide for current needs and are unsuccessful in efforts to accumulate a reserve.

Prices are being maintained with considerable firmness. Jobbers quote nut, pea and slack, egg or lump at about \$5 a ton at the mines and some sales are reported to have been made at a higher price. Mine-run ranges from \$4.25 to \$4.50 for ordinary steam coal and is about \$1 higher on smokeless. Smokeless lump and egg is held at \$6 and \$6.25 at the mines and is to be had in small amounts, though larger sizes of smokeless, are virtually out of the market.

Users of domestic coal are taking a little stock, though the demand has slackened off. Retail dealers find it difficult to renew stocks at this time.

**Lake Trade**—Though the amount of coal arriving at Lake shipping ports, especially from the Pittsburgh district, is still short of normal, there is an improvement over preceding weeks this season. The plan of pooling shipments is apparently aiding in bringing about an increase in car supply.

#### CINCINNATI

Conditions hampering production and shipment have not changed, and continue to make a strong market, although activity is not great.

Transportation difficulties continue the most important factor in the market, although figures made public by the railroads also show that loadings are approaching record figures. Unprecedented consumption is undoubtedly responsible for the inability of the roads to handle the production, and the increasing number of mines has rendered the amount of rolling stock inadequate.

The market is more quiet just now, although it has not lost any strength, and buyers are now pretty firmly convinced that the progress of the summer is going to see still higher prices, and difficulty in obtaining coal in large volume. Several recent instances have given point to this belief, notably the failure of state institutions to receive bids for their coal requirements for the fiscal year.

#### LOUISVILLE

Embargoes and car shortage continue to handicap Kentucky coal operations. Prices off as result of curtailment of distribution.

Embargoes and the car shortage, which is described by Kentucky operators as becoming continually worse, have been the dominant influences on the coal trade this week in the Louisville market. Eastern Kentucky shippers point to the fact that there is an embargo operating to prevent their shipping via the Pere Marquette, which, it is said, carries about 65 per cent. of shipments from that section to the Lake markets.

Kentucky and Southern buyers, expecting lower prices later, are not stocking very heavily. Western Kentucky operators complain bitterly of the insufficient supply of cars and there are statements to the effect that if conditions continue as they are for another thirty days there will be wholesale shutting down of mines in that part of the state. A 20 per cent. car supply at Illinois Central mines is reported for the week.

Eastern Kentucky-Tennessee quotations are: Block, around \$4.50; mine-run, \$4.50; nut and slack, \$4.25; Western Kentucky, lump, \$2.50@3; mine-run, \$2.50@2.75, and nut and slack, \$2.25, all prices f.o.b. the mines.

#### BIRMINGHAM, ALA.

Improvement in the trade very slight. Quotations practically unchanged. A more liberal car supply for the greater portion of the week stimulated production and distribution.

The inquiry for steam coal was reported as little better than a week ago, the lower grades being more sought after than the high-grade product. However, no complaint is being registered by brokers and producers, as ample business is in hand to keep the mines going for quite a while, and sufficient orders are coming in daily to take care of such coal as is available for the spot trade. Railroads and industrial plants have no stocks and are dependent on daily receipts to fill their requirements, hence there is little chance for an accumulation of coal under present conditions, and prices will not likely suffer any depression for some time to come. Big Seam mine-run and equal grades are quoted from \$2.75 to \$3.25 mines, Carbon Hill \$3.25 to \$3.50, Pratt \$3.75 and Black Creek and Cahaba \$4 per net ton, mines. High-grade steam lump is bringing \$4.25 to \$4.50.

The domestic trade is better than the steam and retailers are taking every car they can get, but are making deliveries to the householders in about the same proportion that it is received from the mines and are therefore making little progress in stocking. Lump and nut are quoted at from \$4.50 to \$5.50, mines.

Labor conditions in the coal fields are unsatisfactory, both company men and miners being very irregular at their work, production suffering considerably on this account. There is talk of another wage increase in the near future, but past experience has shown that neither efficiency nor regularity has been appreciably improved by increased compensation.

## Coke

#### CONNELLSVILLE

Possible Government price regulation. No improvement in car supplies. Indisposition to contract.

Some Connellsville coke operators think there is a decided prospect that eventually the Government will step in to regulate coke prices, as with continued car shortage the furnaces do not get all the coke they need, and with pig iron selling at about \$50 a ton there is no limit as to where coke prices might go. This is one reason why they are indisposed to make contracts for second-half, as on contract they could hardly get the spot level, while with no contracts they could get the spot price until regulation should come.

Apparently no action has been taken yet by the Commission on Car Service at Washington following the plea of blast-furnace interests that there is not enough coke to make all the pig iron that otherwise could be made and that a full pig-iron production is essential for the best conduct of the war. The formal statement, following an informal conference, reached Washington last Friday.

There is somewhat heavier demand than usual for spot coke, possibly due in part to furnaces endeavoring to accumulate a surplus against the inevitable decrease in shipments in Independence day week, and prices are a shade higher, Pennsylvania equipment bringing more than P. & L. E., because the latter road will not allow its cars to go off its own lines. There is nothing definite on contract prices, which are practically nominal. The Youngstown Sheet and Tube Co. recently inquired for 10,000 tons a month over the second half of the year, for its Hubbard furnaces, which the byproduct plant cannot fully supply in addition to the requirements of the Youngstown stacks, and states that it has closed for the tonnage, but the price cannot be ascertained. We quote: Spot furnace, \$11@12; contract, nominal, \$8.50@9; spot foundry, \$11@12.50; contract, \$9.25@10, per net ton at ovens.

The "Courier" reports production in the Connellsville and lower Connellsville region in the week ended June 9 at 361,088 tons, an increase of 15,368 tons, and shipments at 361,479 tons, an increase of 16,752 tons.

**Buffalo**—The market is strong. There is renewed complaint of both car and labor shortage, with a steady demand from all sources. Prices are therefore with an upward tendency, as follows: For 72-hour Connellsville foundry, \$11.50@12; for 48-hour furnace, \$10.50@11; for low grades and stock, \$9.50@10.

**Birmingham**—The demand for coke is very strong in this district and contracts maturing July 1 are being renewed from \$11.50 to \$12.50 per net ton, ovens, for foundry coke, customers of long standing and large requirements getting the benefit of the lower figure. Spot coke brings \$14 and \$15 per ton, ovens. Furnace coke is hardly obtainable and is reported as bringing from \$6 to \$8 per net ton, ovens. The local consumption of furnace coke is the heaviest in the history of the district and some of the furnace companies are experiencing difficulty in getting a sufficient supply to keep their stacks going.

## Middle Western

#### GENERAL REVIEW

Price changes during week of minor importance only. Demand very strong, with poorer car supply in East and slight improvement in Illinois and Indiana. Railroads are placing large orders.

There has been very little change in prices the past week, although the demand for prompt shipments on new business continues strong, and free coal is being quickly disposed of. The bulk of the tonnage is moving to the retailers who are buying heavily and putting as much coal in stock as they possibly can. The large users of steam coal have cut down their purchases and are receiving shipments only in sufficient quantities to meet immediate demands. This has been beneficial to the retailers who have so far been unable to secure enough coal to furnish the usual summer demands, and they are taking advantage of the lull, knowing that the demands in a few weeks will be far greater than at any time the past year.

The car supply has ranged from 55 to 65%, Southern Illinois mines reporting a fairly good supply and Indiana a little bet-



ter than 50%. Shippers of Eastern coals to this market complain of the poorest car supply ever experienced, and as a result very little of that coal is reaching this territory. The low delivered price of Western coals as compared to Eastern also has had a tendency to lessen the demand for all-rail shipments of bituminous.

Shipments via Lake the past week have been almost normal. The docks at Superior and Duluth have shipped to points in the Northwest during May, within 600 cars of the shipments of the same month a year ago, and about 4800 more cars than during May of 1915. Prices at the docks are variable. Dock companies at upper Lake ports are quoting anthracite egg and stove at prices ranging from \$7.30 to \$7.75; Youghiogheny prepared sizes, \$6.75 to \$7; Pocahontas, \$7.50 and \$7.75; cannel, \$7.50 and smithing, \$7.50, all f.o.b. cars at the docks. Very few, if any of the dock companies have coal in stock, shipments being made about as fast as cargoes arrive.

Arkansas semi-anthracite has found a ready demand throughout the mid-west, territory not heretofore covered by these coals; however, poor car supply and an over-abundance of orders placed some weeks ago in markets closer to the mines has prevented the fulfillment of orders, and retailers who expected this coal to replace Pocahontas are sorely disappointed.

#### CHICAGO

Chicago demand is very heavy, especially for Indiana and Illinois coals. Supply of anthracite is low with no change in prices. Car supply in mid-west some better.

The market situation in Chicago is peculiar in that there has been a tendency among the buyers to place fewer orders for Eastern coals, and offsetting this by making heavy purchases of Indiana and Illinois grades. The lower price level for the Western coals is responsible for this action as dealers and householders are evidently making an effort to save money on coal purchases. The shipment of such coals as Hocking and Eastern Kentucky, also West Virginia, to this market are very limited, as compared with previous years. This heavy demand for the better grades of Indiana and Illinois coals is also preventing railroads in this territory from creating storage piles and is causing much alarm. One Canadian railroad came into the market the past week, desiring 1000 cars for immediate shipment and it is understood the price on this business was the same as charged to the regular dealer trade.

Shipments via Lake to Chicago the past week were slightly in excess of 40,000 tons. All-rail anthracite shipments have been unusually light, and retailers here will probably have to depend almost wholly on boat shipments. No premium prices are reported, but the market indicates that premium prices would have been offered could spot deliveries be had.

In Franklin County the mines have been operating as steadily as car supply would allow, the average for the week being better than 65%. Shipments aggregated about 240,000 tons. Demand is very heavy and is coming mostly from the retailers in a widely scattered territory. The mines are now booked up for more coal than can be shipped this month, and orders for July shipments are being accepted on the basis of "price in effect date of shipment."

The Williamson County operators are having a good demand from steam and domestic buyers, and most of the mines are oversold for the ensuing four weeks. June shipments are being made on basis of \$3.50 for prepared sizes with some spot sales at 25c. to 50c. higher.

Saline County mines are in the main sold up for the next 30 days. Car supply has been fairly good. This is also true of Cartersville.

Springfield mines are operating as near full time as car and labor supply will permit. Most all the egg coal has been sold for railroad purposes. Canadian railroads have purchased more than 1000 cars of this coal for immediate shipment, paying close to the regular price made the retailers. Lump is about the only grade available for domestic use.

The market in Indiana has been somewhat unsettled. Consumers have been expecting the state to fix a price much lower than the one now in effect. The Governor has stated that a special session of the legislature will be called to pass a law that will fix the profit of wholesalers and jobbers at 25c. per ton over the actual cost. This, of course, would materially reduce prices, and has caused a lessening of the demand within the state, giving the operators an opportunity to take care of other business, the railroads accepting all the egg that is offered, and steam plants taking no chances on what the state legislature

can or will do about coal prices. Car supply has averaged a little better than 55%.

Fulton and Peoria Counties, also Grundy, LaSalle, Bureau and Will, are having a good supply of cars, and are working 75 per cent. of full running time. Local labor troubles have caused some lost time. Free coal is commanding good stiff prices, but most of this coal is under contract.

The movement of Hocking and splint coals to this market is very limited. Prices are much out of line, and shipments have practically stopped.

Eastern Kentucky prices are variable, and there have been few arrivals at present high-price levels. The Chicago retail price is \$10.50 as against \$6.50 for Southern Illinois. Domestic buyers cannot see the \$4 difference, and the retailers are handling very little of this coal and the majority of dealers none at all.

Prices f.o.b. cars the mines are as follows:

	Springfield	Fulton and Peoria Cos.	Clinton and Sullivan Cos.	Green and Knox Cos.	Cartersville
Domestic lump.....	\$3.25@	\$3.25@ 3.50	\$3.50@ 3.75	\$2.75@ 3.00	\$3.25@ 3.75
Steam lump.....	3.00@	3.00@	3.00@ 3.25	2.50@ 2.75	3.00@ 3.25
Egg.....	3.25@	3.25@ 3.50	3.50@ 3.75	2.75@ 3.00	3.25@ 3.75
Nut.....	3.25@	3.25@ 3.50	3.50@ 3.75	2.75@ 3.00	3.25@ 3.75
Mine-run.....	2.75@ 3.00	2.75@ 3.00	2.25@ 3.00	2.25@ 2.60	3.00@
Screenings.....	2.25@ 2.75	2.25@ 2.75	2.25@ 3.00	2.25@ 2.50	2.75@ 3.00

	Williamson and Franklin Cos.	Saline and Harrisburg	Poca. and W. Va. Smokeless	Penna. Smokeless	Eastern Kentucky
Lump.....	\$3.50@ 3.75	\$3.50@ 4.00	\$5.00@ 5.50	\$5.50@ 5.75	\$5.00@ 5.75
Egg.....	3.50@ 3.75	3.50@ 4.00	5.00@ 5.50	5.50@ 5.75	5.00@ 5.75
Nut.....	3.50@ 3.75	3.50@ 4.00			
No. 1 nut.....	3.50@ 3.75	3.50@ 4.00			
No. 2 nut.....	3.50@ 3.75	3.50@ 3.75			
No. 3 nut.....	3.25@	3.00@ 3.25			
No. 1 washed.....	3.50@ 3.75				
No. 2 washed.....	3.50@ 3.75				
Mine-run.....	3.00@ 3.25	2.75@ 3.25	5.00@ 5.50	5.00@ 5.50	5.00@ 5.25
Screenings.....	2.75@ 3.25	2.75@ 3.25			

Hocking Lump \$4.50@ 4.75. Splint Lump \$4.25@ 4.75.

La Salle, Bureau, Grundy and Will Counties: Lump, \$3.25@ 3.50; furnace, \$3.25 @ 3.50; No. 1 nut, \$3.25@ 3.50; washed nut, \$3.25@ 3.50; washed screenings, \$3.25; raw screenings, \$2.75@ 3.25; steam lump and mine-run, \$3.

#### MILWAUKEE

Interest centered on coal supply. Prices high but demand continues urgent.

Coal continues to hold a leading place in public attention, despite the fact that there will be practically no consumption for heating purposes for the next four months. Consumers grumble at prevailing prices, but nevertheless, they are placing orders on waiting lists and taking their chances on what the bill will be when the fuel is delivered. The demand, considering the season, is urgent and unreasonable, and the volume of deliveries is almost as heavy as in winter time.

The retail price list now prevailing, minus carrying-in charge, is: Anthracite egg and stove, \$9.05; nut, \$9.30; pea, \$8.20; buckwheat, \$7.60. Bituminous Pocahontas, screened, \$9.75; mine-run, \$8.50; Hocking, nut and lump, \$8.50. Coke, Solvay, \$9.25; pea, \$7.

Coal arrivals by Lake continue smaller in volume than last year. The bituminous piles are growing larger, but anthracite is absorbed as fast as received.

#### ST. LOUIS

Market conditions much easier, but there is still no surplus in some sizes. Car shortage more severe. General conditions more stable, with favorable indications for a normal movement. Eastern arrivals increase.

The market in the St. Louis territory is rather easy now, and more like normal than it has been for sometime past. There is practically no demand for high-grade coal in the city at all. As a matter of fact, screenings and the steam sizes are heavy, and there is no particular circular being maintained on them. This is largely on account of some restricted equipment, but in a general way the steam market locally is weak.

The country demand for high grade continues better than normal from both north and south, but the buying is conservative as regards both prices and tonnage.

In the Mt. Olive field conditions are unchanged. There is a car shortage on the equipment going to the country and prices there are from \$3 to \$3.50 and easily maintained, whereas a St. Louis price of \$2.25

is being charged the regular trade. There is no surplus in this field to speak of, and the railroad tonnage is heavy.

In the Standard field some irregularity governs. There is at times a shortage of this grade of coal on account of the heavy railroad tonnage. When the market goes down the railroads buy several thousand cars, and this has a tendency to keep this coal off of the market. There is considerable tonnage being moved out into the country where formerly high-grade went, and for the first time it is moving south even at a higher rate than high-grade. The steam market on these grades are off considerably, but not to the extent that they are on high-grade.

Considerable anthracite is moving in. Last week something like 125 to 150 cars came through, and in the neighborhood of 30 to 35 cars of smokeless, in addition to a heavy tonnage of Arkansas, anthracite and smokeless.

Car-supply conditions are not good. Some mines on the Illinois Central have not had cars for 9 days, and in a general way the supply is about 2 to 2½ days a week throughout the southern Illinois field, with everything to indicate that it is going to be worse.

The prevailing circular is, per net ton, f.o.b. mines:

	Williamson and Franklin County	Mt. Olive and Staunton	Standard
6-in. lump.....	\$3.50	\$2.25	\$2.25
3x6 in. egg.....	3.50	2.25	2.25
2x3 in. nut.....	3.50	2.25	2.25
No. 2 nut.....	3.50		
No. 3 nut.....	3.25		
No. 4 nut.....	3.00		
No. 5 nut.....	2.50		
2-in. screenings.....	2.60	2.25	1.75
2-in. lump.....		2.25	2.10
3-in. lump.....		2.25	2.10
Steam egg.....		2.25	2.10
Mine run.....	3.00	2.25	2.00
Washed:			
No. 1.....	3.75		
No. 2.....	3.50		
No. 3.....	3.25		
No. 4.....	3.00		
No. 5.....	2.50		

Rate on Williamson & Franklin Co. is 72½c. Rate on other fields is 57½c.

### Northwestern Markets

#### SEATTLE

Coal shortage expected to make prices soar this winter. Dealers adopt cash sales system.

Coal operators and railroads are predicting a serious coal shortage on the entire Pacific Coast, including Idaho and Montana this winter due in part to the fact that no coal whatever is being brought to Pacific ports from Australia and that Transcontinental railroads are storing large quantities on the Western divisions to handle increased traffic. The Southern Pacific Railroad has only about a 10-days' supply of oil on hand and is going to the extreme of laying in old lumber, ties and bridge timbers along its right of way for fuel. Utah mines are shipping mostly to California with the result that Idaho and Montana markets are short at a period of the year when ordinarily all the coal necessary could be shipped.

Retail dealers in Seattle have adopted the cash on delivery system and have temporarily absorbed the increase in prices made by the operators, but any further increase will have to be taken care of by the consumer. Increased industrial activity is consuming more coal, particularly the ship-building plants of Puget Sound, and mines are getting behind on deliveries.

#### GREAT FALLS, MONT.

Advance in wages causes increase in prices. Coal shortage acute and panic among dealers is communicated to consumers.

Never in the history of the coal business of Montana have the prospects for high prices and extreme shortage of coal been as certain as now. Not only has the production of coal fallen behind the increase in population in Montana, but the call from outside markets such as North and South Dakota and Minnesota, is heavy. Many mines are also far behind in deliveries because of the scarcity of labor and lack of cars. The board of railroad commissioners have issued warnings to dealers who have become panicky over the prospects of an acute shortage and the consequent clamor of consumers who have become aware of the situation. The fact that a transcontinental railroad operating in the state recently contracted with a coal mining company located on a competitive line in Montana for 150,000 tons of coal for immediate use and reserve indicates just how seriously this carrier has taken the situation. Dealers in all parts of the state have been advised by operators not to figure ahead any longer than June 15 on the basis of present prices which has caused some amusement, as dealers have been able to get little coal on the basis of any price at all.

### General Statistics

#### LAKE SHIPMENTS

Shipments through the Sault Ste. Marie Canal for May were as follows: U. S. Canal anthracite coal, 223,810 tons; bituminous, 1,047,667 tons; Canadian Canal anthracite, 50,700 and bituminous, 156,450 tons.

#### CARLOAD SHIPMENTS

The following is a comparative statement of carloads of bituminous coal that originated on 82 railroads and of beehive coke on 16 roads in May, 1917, compiled from reports received by the Geological Survey, Department of the Interior, by noon, June 15, 1917:

	May, 1917	April, 1917	May, 1916
Number of working days.	26	25	26
Carloads of bituminous coal originating mainly in the following districts:			
Central Penn., Md., and New River and Pocahontas fields of W. Va. and Va. (11 roads).....	186,249	170,560	173,190
Western Penn., Ohio and Mich. (12 roads).....	113,463	107,374	87,289
E. Ky. and W. Va. (except New River and Pocahontas fields) (11 roads).....	173,101	153,406	173,258
Ala., Tenn., and Ga. (5 roads).....	13,287	12,168	12,371
Ill., Ind., and W. Ky. (20 roads).....	162,104	135,532	84,865
Ark., Iowa, Kan., Mo., Okla., and Tex. (12 roads).....	50,320	41,158	37,584
Rocky Mt. States, N. D., and Wash. (11 roads)....	41,150	37,611	28,960
82 roads.....	739,674	657,809	597,517
Carloads of beehive coke (16 roads).....	75,528	72,222	76,096

The increase in these shipments of bituminous coal in May, 1917, compared with April, 1917, was 12.4 per cent., and compared with May, 1916, was 23.8 per cent. The average number of cars loaded per working day on the 82 roads was 28,449 in May, 1917, an increase of 8.1 per cent. over April, 1917, and of 23.8 per cent. over May, 1916. The daily average of cars loaded in May, 1917, was 28,449, compared with 26,312 in April, 1917, and 22,981 in May, 1916. The daily average loading in May, 1917, in all districts mentioned was greater than in April, 1917, and, except in eastern Kentucky and part of West Virginia, was greater than in May, 1916.

The shipments of beehive coke in May, 1917, showed an increase of 4.6 per cent., compared with April, 1917, and a decrease of 0.75 per cent. compared with May, 1916.

#### PENNSYLVANIA R.R.

Fuel movement over this road for April and the first three months of the year, together with the increase or decrease over the same period last year, was as follows:

	April	Increase or Decrease	3 Months	Increase or Decrease
Anthracite coal, short tons.....	782,163	+ 15,623	3,764,399	+230,659
Bituminous coal, short tons.....	4,461,030	+581,760	17,071,981	+473,541
Coke, short tons.....	1,077,893	-176,519	4,046,777	-885,974
Total.....	6,321,086	+420,864	24,883,157	-643,092

+ Denotes Increase. — Denotes Decrease.

#### COAL MOVEMENT

Fuel shipments over 13 leading Eastern carriers for March and 3 months of 1916-17 were as follows, in short tons.

Classes and Railroads	1916	March 1917	1916	3 Months 1917
Anthracite:				
Baltimore & Ohio.....	190,276	149,187	508,634	501,659
Buffalo, Rochester & Pittsburgh.....	14,633	27,571	49,899	57,200
Buffalo & Susquehanna.....	664	841	2,287	1,955
Chesapeake & Ohio.....	779	1,590	3,138	2,934
Erie.....	901,696	1,037,462	2,637,488	2,648,748
Huntingdon & Broad Top Mountain.....	64	97	188	188
Pennsylvania.....	1,120,060	1,121,117	3,227,518	2,982,236
Pittsburgh & Lake Erie.....	28	72	132	288
Pittsburgh, Shawmut & Northern.....	1,338	655	4,297	3,989
Virginian.....	248	267	545	1,455
Western Maryland.....	35,015	28,479	98,631	110,402
Total.....	2,264,737	2,367,305	6,532,666	6,311,054
Bituminous:				
Baltimore & Ohio.....	2,944,665	3,004,026	8,630,762	8,441,265
Buffalo, Rochester & Pittsburgh.....	836,885	897,327	2,567,899	2,330,774
Buffalo & Susquehanna.....	113,511	129,082	409,446	366,982
Chesapeake & Ohio.....	2,298,216	2,098,678	6,548,497	5,974,696
Erie.....	889,331	807,426	2,577,912	2,207,404
Huntingdon & Broad Top Mountain.....	98,818	131,459	316,803	377,426
New York Central (Buffalo and East).....	797,093	796,654	2,319,611	2,182,447
Norfolk & Western.....	2,403,877	2,301,651	7,070,107	6,719,968
Pennsylvania.....	4,203,171	4,644,949	12,719,170	12,610,951
Pittsburgh & Lake Erie.....	1,003,758	923,869	2,956,372	2,699,071
Pittsburgh, Shawmut & Northern.....	237,775	168,890	756,559	468,704
Virginian.....	498,189	580,956	1,431,795	1,605,363
Western Maryland.....	625,168	931,921	1,937,454	2,467,839
Total.....	16,950,457	17,417,418	50,242,387	48,452,890

#### SOUTHWESTERN TONNAGE

The following is the comparative statement of production issued by the Southwestern Coal Operators Association for November December and the years 1915 and 1916:

State	November 1915	1916	December 1915	1916	Year 1915	1916
Missouri.....	276,728	321,883	267,715	332,820	2,722,463	3,088,734
Kansas.....	611,877	589,918	634,223	597,230	6,134,950	6,116,351
Arkansas.....	174,867	155,244	111,003	148,433	1,379,427	1,364,274
Oklahoma.....	287,418	65,585	306,282	53,750	2,990,430	1,851,207
Total.....	1,350,890	1,132,630	1,319,223	1,132,233	13,227,270	12,420,566

Above only covers tonnage of Association members, estimated as approximately 95% of production in Missouri, Kansas and Arkansas and 20% in Oklahoma. A. T. Cheatham.

#### ANTHRACITE SHIPMENTS

Assurance to the coal consuming public that the anthracite mines will be able to meet all reasonable demands during the coming summer and fall, provided operations are not hampered by withdrawals of labor for the army or into other fields of employment, is given in the statement of shipments for May. The record made for last month was the largest in the history of the region with the single exception of the month of March this year.

The aggregate shipments reported for May amounted to 6,917,525 long tons, an increase as compared with the same month last year of 1,369,626 tons, and exceeding the month of April this year by 1,325,226 tons. The maximum record of March of this year exceeded the shipments of last month by only 71,550 tons, or a little over 1 per cent.

The Reading Company led in the quantity shipped in May, with 1,341,987 tons, the record for that company with the exception of March of this year and in October, 1912, and the Lehigh Valley's showing of 1,275,513 tons was exceeded by that company on one previous occasion in the last two years—in April, 1915.

Distributed by carrier companies the shipments during May were as follows:

	1917	1916
P. & R. Ry.....	1,341,587	963,385
L. V. R.R.....	1,275,513	1,015,264
C. R.R. of N. J.....	735,758	544,899
D. L. & W. R.R.....	1,090,549	909,012
D. & H. Co.....	774,278	677,405
Penna. R.R.....	498,052	478,602
Erie R.R.....	786,995	665,883
N. Y. O. & W. R. W.....	179,386	161,342
L. & N. E. R.R.....	352,920	132,107

\* Deduction.....

### Foreign Markets

#### GREAT BRITAIN

May 31—The Whitsun holiday has not had the expected effect on prices, the heavy output of last week having increased the available stocks, and the arrivals of tonnage not being sufficient to materially reduce them. Prices are weaker.

Best Welsh steam.....	Nominal
Best seconds.....	Nominal
Seconds.....	\$6.48@6.72
Best dry coals.....	5.76@6.00
Best Monmouthshires.....	6.48@6.72
Seconds.....	5.76@6.00
Best Cardiff smalls.....	4.32@4.56
Cargo smalls.....	3.84@4.08

The prices for Cardiff coals are f.o.b. Cardiff, Penarth or Barry, while those for Monmouthshire descriptions are f.o.b. Newport, both net, exclusive of wharfage.

Freights—Tonnage continues to be scarce, and rates in all directions are very firm.

Gibraltar.....	\$21.00	Port Said.....	\$28.80
Marseilles.....	21.54	Las Palmas.....	18.00
Genoa.....	24.30	St. Vincent.....	19.20
Naples.....	23.58	River Plate.....	26.40
Alexandria.....	28.80		

	May 1917	1916	Five Months 1917	1916
P. & R. Ry.....	1,341,587	963,385	5,836,538	5,235,815
L. V. R.R.....	1,275,513	1,015,264	5,394,791	4,830,006
C. R.R. of N. J.....	735,758	544,899	3,301,679	2,814,013
D. L. & W. R.R.....	1,090,549	909,012	5,047,818	4,233,680
D. & H. Co.....	774,278	677,405	3,292,303	2,979,928
Penna. R.R.....	498,052	478,602	2,336,196	2,587,192
Erie R.R.....	786,995	665,883	3,564,429	3,347,134
N. Y. O. & W. R. W.....	179,386	161,342	818,447	825,759
L. & N. E. R.R.....	352,920	132,107	1,484,262	931,163

\* Deduction.....

\* Deduction: Tonnage reported by both C. R.R. of N. J. & L. & N. E. R.R.